

# apc

April 2010

AUSTRALIAN PERSONAL COMPUTER

Plasma

**THE BEST HDTV!**

Why Panasonic's Z series plasma is the best TV of all



# DOWNLOAD SECRETS!

**WE EXPOSE THE TRICKS & TOOLS OF THE PIRATES**

**...and show you how to get stuff legally!**

Where to find and download HD movies, music and TV shows  
How to stream them to your TV from a PC, Xbox or PS3  
Best NAS units to share thousands of video and music files at home

**apc FREE SOFTWARE** DVD ROM  
No 4 / APRIL 2010 SOFTWARE / SECURITY / PLAYERS

**ASHAMPOO OFFICE 2008**

Full office suite also edits Word Excel and PowerPoint files!



TM  
PM  
PR



**ASHAMPOO PHOTO COMMANDER 6**

All-in-one and easy-to-use photo organiser and editing package!



**1-ABC.NET BACKUP 2.0**

Secure your data with this powerful but lightweight backup solution!

**OPENSUSE 11.2**  
The latest version of this cutting-edge Linux OS!



**ALL WEB MENUS PRO LITE**  
Create web menus the easy way!



**NERO 9 LITE**  
Burn and copy your data simply: the full Lite Edition!



**2 PLAYABLE DEMOS**  
**TORCHLIGHT**  
**PLUS: GRATUITOUS SPACE BATTLES**

Broadband

**SUPERFAST NETWORK**

A year after launch, is the national broadband network on track?

Master Builder

**CORE i3 THEATRE**

David Kong builds media centre using the perfect CPU for the job!

Tips and Tricks!

**PC FORENSICS**

How to find out what a computer is being used for!



Use of this disc and its content is subject to the disclaimer on the back of this case and on the DVD and any applicable third party license terms. APC is not able to provide technical support for this DVD or any software provided on it. Full working versions are for personal use only. Some programs on this disc require online registration. Disc is not to be sold separately. \* Backup 2.0 and AllWebMenus Pro Lite prices are in US dollars.

apc magazines

\$9.95 inc GST  
NZ \$10.00 inc GST  
ISSN - 0725-4415



04

ONE CHAIR. INCREDIBLE VIEW.



Manage thousands of desktops from a single console with the world's leading virtual desktop solution - VMware View™ 4. Centralise desktops, applications, and data for increased control, versatility, and security. Reduce your total cost of desktop ownership by 50 percent with the only virtualization solution built for delivering desktops as a managed service. Enjoy the view.

Experience the power of desktop virtualization.

[www.vmware.com.au/view](http://www.vmware.com.au/view)

For enquiries, call VMware's tollfree numbers:

1800 VMWARE (AU) | 0508 VMWARE (NZ)

vmware

© 2010 VMware, Inc. All rights reserved. VMware and VMware View are registered trademarks and VMware View is a trademark of VMware, Inc.

## BONUS SOFTWARE FOR APC READERS

Full office suite: edits Word, Excel and PowerPoint files!

**ASHAMPOO PHOTO COMMANDER**  
All-in-one and easy-to-use photo  
organiser and editing package!



All-in-one and easy-to-use photo  
organiser and editing package!



Secure your data with this powerful but lightweight backup solution!



The latest version of this cutting-edge Linux OS!



Create web menus the easy way  
with this software package!



Burn and copy your data: the full Lite Edition from the first name in burning!



Action-based RPG from the creators of Diablo!

If you like *Star Trek* then you'll love this!



**FULL  
WORTH  
\$\$  
VERSION**

This logo indicates a free, complete and unrestricted software package, available only on APC's cover DVD.



When you see this icon throughout APC, it means bonus software is included on the cover disc.



- gTorrent 1.8.4
- AC3Filter 1.63b
- Ad-Aware Free Anti-Malware 8.1.0
- Adobe Reader 9.1.2 for Linux
- Adobe Reader 9.1 for Mac OS X (Intel)
- Adobe Reader 9.1 for Windows
- eMule for Mac OS X 2.2.5
- Autotuns for Windows 9.53
- AVG Anti-Virus Free Edition 9.0
- Belarc Advisor 8.1b
- CCleaner 2.23.99
- CD Recovery Toolbox Free 1.0
- CDBurnerXP 4.2.5
- Celestia 1.5.1
- DivX 7 for Mac/Win
- eMule 0.49c
- Free Download Manager 3.0 848
- FreeCommander 2009.02a
- GParted - 0.46-1
- GSpot 2.70a
- Hard Drive Powerwash Free
- ImgBurn 2.5
- IZArc 4.0 Beta 1 (1760)
- Java Runtime Environment 6 (Update 17) for Linux
- Java Runtime Environment 6 (Update 17) for Windows
- Linux Kernel 2.6.32.1
- Microsoft .NET Framework 1.1
- Microsoft .NET Framework 2.0
- Microsoft DirectX End-User Runtimes (March 2009)
- Microsoft WorldWide Telescope
- Mozilla Firefox 3.5.4 for Linux
- Mozilla Firefox 3.5.4 for Mac OS X
- Mozilla Firefox 3.5.4 for Windows
- openSUSE 11.2
- PC Inspector Smart Recovery 4.5
- PeerGuardian 2.0 6c
- Process Explorer 11.33
- Process Monitor 2.6
- Real Alternative 2.0
- Spybot - Search and Destroy 1.6.2.46
- Stellarium 0.10.2
- TestDisk 6.11
- Undelete Plus 2.98
- Universe Sandbox 1.0.424 0
- UnRARX 2.2
- VLC media player 1.0.1 for Mac/Win
- Vuze 4.2.0.2 for Linux/Mac/Win
- XviD 1.2.2
- ZinGenius 6.0.3

This issue of APC published by ACP Magazines Pty Ltd (APC) may contain offers, competitions or surveys which require you to provide information about yourself if you choose to enter or use the prize in them (Reader Offer). You may provide information about yourself to ACP Magazines Pty Ltd (APC) to use this information to provide you with the products or services you have requested, and may supply your information to the contractors who help APC to do this. APC will also use your information to inform you of other APC publications, products, services and events. APC may also give your information to organisations that are providing special prizes or offers and that are clearly associated with the products, services or events that you have requested. APC may also give your information to other organisations that may use it for their purposes. If you would like to gain access to the information APC holds about you, please contact APC's Privacy Officer at ACP Magazines Pty Ltd, 54-58 Park Street, Sydney NSW 2000.

## COVER STORY

## THE BLACK HAT ISSUE!

• Where YOU can download movies, music and TV shows legally.  
• How to store and share thousands of video & music files at home.

40

## REGULARS

<b>Editorial</b>	Editor's letter	06
<b>Technotes</b>	All the latest news	08
<b>Feature</b>	National broadband network	12
<b>Opinions</b>	Reader opinions	14
<b>End User</b>	Reader humour	16
<b>Watchdog</b>	Consumer affairs	18

<b>Quick tips</b>	Tech tips plus reader Q&A	84
<b>Insider tips</b>	Going virtual	88
	Tweaking made easy	89
	Publish iPod nano videos to YouTube	90
<b>OS Challenge</b>	Roll your own Linux distro	92
<b>Workshops</b>	Automate your PC	94
	Print perfect digital photos	98
	Get the most out of Dropbox	101
<b>Masterclass</b>	SEO: keyword search	104

<b>Gear</b>	The coolest tech to look out for	112
<b>Games</b>	The latest games reviewed	115
<b>Chip Chat</b>	The lighter side of IT news	117

## APC LABS

<b>Labs intro</b>	Nick's pick	22
<b>Reviews</b>	Enspire Vitesse GX15	23
	HP MS210 All-in-One PC; HP LX197	24
	TI Deluxe S40	25
	ASUS KS2Jr; HP Mini 210	26
	MSI HD S770 HAWK	27
	Sapphire HD 5450 512MB GDDR3	27
	Corsair Dominator GTX	28
	G.Skill PC3-17600 PI Series	28
	HIS HD 5750 1GB iCooler IV	29
	WD MyBook 3.0	29
	Sapphire HD 5670 1GB GDDR5	30
	ASUS uBoom 2.1 Soundbar	30
	Belkin Double N+ wireless	31
	Netgear RangeMax	31
	HP Officejet 6000	32
	FujiXerox Phaser 310 MFP/S	32
	Sony Bloggie HD webcam	33
	Canon EOS 550D	33
	Pioneer BDR-205	34
	DViCo TViX M6600-N	34
	Panasonic TH-P5421A plasma	35
	Typekit	36
	Quicken Personal Plus 2010	37
	Best Apps	38
<b>Cover</b>	Download secrets	40
<b>Best Tech</b>	Your guide to the best of tech	66
<b>Master</b>	Pro builder	70
<b>Builder</b>	Master builder	72

## FEATURE

12

## NATIONAL BROADBAND NETWORK - UPDATE



# ADSL2+

**\$0 SETUP**

# 120GB

60GB Peak (8am-2am) + 60GB Off peak (2am-8am). Uploads not counted.

# \$49<sup>99</sup>

PER  
MONTH

x 18 MONTHS = \$899.82

NOW WITH:

# UNLIMITED BROADBAND

512K/512K SHAPING<sup>A</sup>

# MOBILE

**NO CONTRACT**

Buy as many as you want

# \$14<sup>99</sup>

PER  
MONTH

WHEN YOU HAVE TPG BROADBAND

# \$300

Calls, Text & Data

\* CONDITIONS APPLY

+ ONCE OFF \$20 SIM + \$20 DEPOSIT = \$54.99 MIN CHARGE IN FIRST MONTH

**FREE** 20 minute TPG Mobile to TPG Mobile calls between 8pm & midnight\*

## WHY PAY MORE?

 [tpg.com.au](http://tpg.com.au)

13 14 23



**ADSL2+:** Optimal ADSL2+ speeds require compatible ADSL2+ modem and filters. Early termination fee applies. **A** Once you use your peak/off peak quota, your connection speed is shaped to 512K/512K. **MOBILE:** Purchase the TPG 49 Cap Saver with any TPG Broadband product and pay \$14.99 per month (after once off SIM charge + deposit) for the mobile service. If your TPG Broadband product is suspended or terminated, monthly charge for 49 Cap Saver reverts to standard price of \$19.99 per month. \* 49 Cap Saver has \$300 worth of included eligible call types and data per month (Cap Inclusion). All calls charged at TPG's standard rates. Excluded from Cap are: premium SMS, Optus Zoo services, Third Party content, International and 190 calls and other Enhanced Services. \* Get free calls between 8pm and midnight to any other TPG or Optus GSM mobile, every day, for the first 20 mins of each call. Data service enabled on request. Plan fee payable monthly in advance. Mobile and deposit required for any excluded or excess usage. Mobile deposit automatically topped up if it falls below \$5. Service barred if deposit topup payment fails. These offers may be withdrawn at any time. Available only in TPG coverage areas. For full terms, conditions and exclusions visit [tpg.com.au](http://tpg.com.au).



# editorial

TONY SARNO



## IT'S TIME WE BRUSHED ASIDE THE STEREOTYPES AND LOOKED AT HOW BITTORRENT CAN BE USED LEGITIMATELY

**I**t's always intrigued me that there are technologies one does not talk about in polite company. Admit to using BitTorrent and similar downloading technologies and you suddenly become a pariah, a pirate depriving content owners of their living and inviting all kinds of malware to infect your machine and the network. This annoys me because the BitTorrent protocol, which allows the distribution of massive multi-gigabyte files, is one of the great technology inventions, and it's even more important now that the high-definition technology in home theatre is starting to cry out for content that makes full use of it. BitTorrent has become demonised because it's widely used to download pirated movies, music and software, but it's also technology we'll need to consider as the home theatre moves into the high-definition era. A concurrent revolution, in which HD video cameras are becoming ultra-affordable, is creating a generation of videomakers and internet television stations who are creating high-quality

video content and distributing it via the net. At the same time, a crackdown by anti-piracy authorities on sites with illegal torrents has forced some to go legitimate: think Mininova or Pirate Bay. The end result is there is more and more legal content on the net that's free, high quality, and which we want to watch on our home theatre HDTVs. It's time we brushed aside the stereotypes and looked at how the very tools favoured by the pirates can be used for legitimate reasons. Our cover story on page 40 also provides tips on how legal content can be played and stored in your home theatre.

On the horizon is a development that one day may deliver HD movies to your home in seconds, but it's only one year into its eight-year delivery schedule. I'm talking about the national broadband network. In light of the recent dramas over the home insulation scheme, we've looked at how this similarly government-run but infinitely more complex project is doing. So far, so good, according to the story's author, David Braue. Fingers crossed.

[tsarno@acpmagazines.com.au](mailto:tsarno@acpmagazines.com.au)

### ADVERTISERS INDEX

Altac	120, 124, 126, 130
Anywara	118, 119, 127
ASUS	7
BlueChip I.T.	49
City Index	75
City Software	Catalogue
Compro	115
D-Link	43
Epson	132
First International	121
Fortune Tec	125
Freenet Antennas	35
Gamadude	25, 111
iBuy Power	19
Microbe	17
MSY Tech	91
Pioneer	131
RIHAC	100
Scorpion Tech	128, 129
Seagate	55
TEG	122, 123
Tohiba	81
TPG	5
VMWare	2

### LOOK OUT FOR THESE



We reserve the Editor's Choice award for the very best products available on the market.



APC's Highly Recommended award is bestowed upon products that are of great overall quality.

### APC APRIL AWARDS





**ASUS**  
Inspiring Innovation • Persistent Perfection

**True**  
USB3.0 • SATA 6G



# P7P55D-E Series Motherboards



## Hybrid Technology

### Intelligent Power Amazing Performance

ASUS, Unique PCIe X4 Bridge Chip design unleashes the performance potential of the latest transfer technology - USB 3.0 and SATA 6Gb/s. Achieving almost **10X** transfer rate for USB 3.0 devices and **2X** the throughput from existing SATA compatible drives.



Hybrid Processor  
**AUTO**  
System Level Up



Hybrid Phase  
**Active**  
Cooling



Hybrid OS  
**Dual OS**  
Support



**P7P55D-E Premium**

Also available models: P7P55D-E Deluxe, P7P55D-E EVO, P7P55D-E Pro, P7P55D-E

■ All specifications are subject to change without notice. Please refer to [www.asus.com.au](http://www.asus.com.au) for more information.



# technote

THE NEW, THE NEWS & THE QUIRKY



## TRY OTHER PHONES NOW

While Microsoft's Windows Phone 7 won't be available until the end of the year, you can try other phones on a web site that lets you navigate their interface. Tryphone.com lists simulations of the latest phones on the market and lets you navigate through their screens and buttons via your computer. [www.tryphone.com](http://www.tryphone.com) is a US site, but several of the major phones in the Australian market are on it.

**PURE**  
HTC's PURE is one of the first phones to get Windows Phone 7. Seditly, it won't be available in Ausetrelie anytime soon.



**MARKETPLACE**  
Windows Marketplace for Mobile: Mobile Operator Showcase Screen.

# Microsoft's iPhone killer (another one!)

Microsoft is overhauling its mobile OS in a 'last chance' catch-up to Apple and Google.

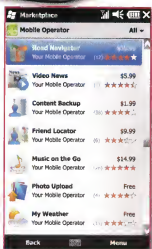
Microsoft has lifted the covers off a radical revamp to its mobile OS, known as Windows Phone 7.

The good news: Windows Phone 7 is easily the most impressive version to date of Microsoft's decade-old mobile OS. In fact, so extensive is this overhaul that the OS is "basically a new entrant into the market," says Andy Lees, senior vice-president of Microsoft's Mobile Communications Business. The bad news? You won't be able to get your paws on a smartphone powered by Windows Phone 7 until the end of this year.

That's a long run-up for Microsoft, its hardware partners (including HTC, Samsung, LG, HP and Dell and Sony Ericsson) and launch carriers, which in Australia are Telstra and Vodafone. But there's no doubt that Microsoft has finally delivered the Windows mobile OS we've been waiting for. In the process, Microsoft

has raised the bar for all the other smartphone operating systems.

The streamlined UI in Windows Phone 7 is large, lush and finger-friendly for phones with multi-touch screens, with delightfully smooth transitions. The home screen is divided into widgets called 'Live Tiles' which show real-time content from contacts, applications and services. Tapping any tile takes the user into the relevant main screen, such as a calendar, or a 'hub' which brings together related content from the web, applications and services into a single view. These hubs will include People, Pictures, Games, Music & Video and Office. While the first two are fairly obvious, the Games hub taps into the Xbox Live service, while Music & Video draws its DNA from Microsoft's Zune player.



David Flynn



# TOP 10

## ...SIGNS THAT GOOGLE IS TAKING OVER THE WORLD

### 1 GOOGLE BUZZ

Google's new Gmail social networking service is out to get Twitter and Facebook.

### 2 GOOGLE MAPS

Google is photographing inside buildings in the US for a future version of Google Maps.

### 3 GOOGLE VOICE

Google's IP-routed free call service is taking revenue from traditional carriers in the US.

### 4 GOOGLE BOOKS

Google is grabbing the rights to millions of "orphan" works and out-of-print books as it amasses the world's biggest digital library.

### 5 GOOGLE EDITIONS

Google has announced an online bookstore that will compete with Amazon.com.

### 6 GOOGLE ADS

A sophisticated mobile maps application is being developed for smartphones and will carry geolocated ads.

### 7 GOOGLE CHROME

Google's web-based OS for networks will be an alternative to traditional operating systems when it launches this year.

### 8 GOOGLE DRIVE

Now just 1GB in Google Docs, this will grow massively and work with the Chrome OS.

### 9 GOOGLE FIBRE

Google is rolling out a gigabit fibre-optic broadband network to half a million US homes and may do it in other countries.

### 10 GOOGLE ELECTRICITY

Google has applied to become an electricity wholesaler in the US, in part to protect its datacentres.



#### ISPY

Using any common webcam in conjunction with ActiveWebcam software, you can create a CCTV system for your home.

## Easy CCTV security

Just download the software.

With the right software, your PC could become a powerful home security system, monitoring several areas simultaneously and alerting you at the first sign of any intruders. All you need is a collection of webcams and some know-how. Firstly, install the trial version of ActiveWebCam ([www.pysof.com](http://www.pysof.com)). It displays a 'Trial version' logo but won't time out, so it's good enough for us. Launch the program, set up a camera and select 'Settings > Motion Detection'. Make sure

motion detection is turned on, with the sensitivity you need it to be (turn it down if there's a pet wandering around to reduce the chance of accidental alerts) and tell the program to alert you via email should it detect something. Now click 'File > New Camera' to add each new camera, using the Motion tab to define how it's treated. That's just about it. Test ActiveWebCam by sending someone into each area and confirming that you're notified, then just leave the program to watch over your home.

# THE G DRIVE IS HERE (WELL, SORT OF...)

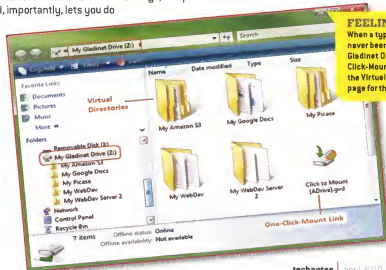
Online storage finally becomes truly accessible with Gladinet.

If you use several free online storage services, you'll love Gladinet, a service that turns several types of web storage into virtual folders on your desktop. Gladinet makes Microsoft's Windows Live SkyDrive finally usable. With 30GB of storage space, Skydrive offers far more online storage than any other free cloud service, but by itself, uses a clumsy upload interface that allows you to load files only one by one. By contrast, Gladinet mounts SkyDrive as a network folder in Windows Explorer and, importantly, lets you do the same with Google Docs. This

is timely because Google recently allowed its Google Docs online storage to be used for storing any kind of file, not just documents, creating an early 1GB version of Google's mythical G Drive. Open up the Google Docs virtual folder created by Gladinet in your Windows Explorer and it looks just like a folder on your PC, with the native Google documents inside it able to be opened by desktop office apps like Word or Excel. Gladinet can also mount any FTP storage, and professional online

storage such as Amazon S3 and now Microsoft's Azure's Blob storage service.

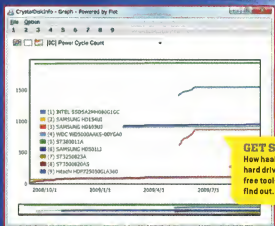
Download the Gladinet app from [gladinet.com](http://gladinet.com), install it on your PC, give it your web storage account names and passwords (it stores the passwords on the PC) and watch it create the virtual folders. While it's not a storage/file syncing service like Dropbox, it does provide users with the ability to back up any folders on their desktop to online.



#### FEELING GLAD?

When a type of storage has never been mounted, the Gladinet Drive exposes a One-Click-Mount link that launches the Virtual Directory mounting page for that storage.





**GET SMART**  
How healthy is your hard drive? With these free tools, now you can find out.

# DRIVE TELEMETRY

New application makes full use of SMART drive monitoring to prevent drive failure.

Hard disks are mechanical devices with moving parts. Over time these parts begin to wear out and, as they do, there will be subtle changes in how the drive performs. If your drive's motor is coming to the end of its life then the drive may take longer to spin up, or files may need fractionally more time to load. These changes and drop-offs in performance aren't likely to be perceptible to even the most experienced PC user. Instead, you'll need special monitor and analysis tools to pick up on them. This is where Self-Monitoring, Analysis and Reporting Technology (SMART) comes in. It's a monitoring system for hard disks that's designed to detect and report on various indicators of reliability in the hope of anticipating failures. All modern

hard disks have SMART built in, but sadly Windows makes little or no use of it. A third party freeware app, CrystalDiskInfo can help, however: you can download it from [www.bit.ly/6gZeES](http://www.bit.ly/6gZeES). When up and running, you should see a breakdown of key drive statistics. Firstly, there's Health Status — if it moves away from Good, replace your drive. Temperature, Power On Count and Power On Hours are also useful. Manufacturers publish the operational tolerances of their drives, and also Mean Time Before Failure (MTBF) figures. If your drive is approaching its MTBF, consider replacing it. If it's running close to its maximum operating temperature, think about making changes to the airflow inside your PC.

CrystalDiskInfo offers a huge amount of esoteric SMART telemetry. With a little web research you should be able to make sense of it. These figures are amalgamated into the app's basic Health Status reading, so stick with that if you're in a rush. Many hard disk manufacturers also offer disk analysis tools tailored to their own drives. Hitachi ([www.bit.ly/Uzcx0](http://www.bit.ly/Uzcx0)) has an excellent selection, including disk fitness testers and a SMART analysis tool. Samsung's HUTIL diagnosis and analysis tools can be found at [www.bit.ly/58kztA](http://www.bit.ly/58kztA) and Seagate's SeaTools testers are at [www.bit.ly/8z0oTo](http://www.bit.ly/8z0oTo). Finally, if you're a Western Digital user, head to [www.bit.ly/4sGBYm](http://www.bit.ly/4sGBYm). From there, you'll need to select your drive and then click 'Data Lifeguard'.



## TRACE AN EMAIL AUTOMATICALLY

When you're worried that an email isn't what it claims to be, you should inspect the headers, which give chapter and verse on where it came from. But reading headers is a fiddly business. Luckily, there are web sites that will do it for you. One such service is IP-address.com ([www.ip-address.com/trace\\_email](http://www.ip-address.com/trace_email)). Save the dodgy email as a text file, then copy and paste from the top to the line that reads 'Content-Type: multipart/mixed'. Enter this into the input box on the site and click 'Trace Email Sender'. You'll know for sure exactly who sent it within seconds.

THE (A)PC  
REVOLUTION  
APR / 1994

Australian  
Personal  
Computer

Choose Your Future

Now Pentium PCs: The Fastest Ever.  
We Benchmark 16  
Fast PowerPCs: Apple and IBM Bring  
PowerPC to the Desktop

### SUPERCALC FOR WINDOWS 1.0

With SuperCalc for Windows, Computer Associates has finally entered the mainstream Windows spreadsheet stakes. This SuperCalc version combines a conventional 2D spreadsheet with the dynamic spreadsheet capability of CA Complete!, which will no longer be sold as a separate product. In recent upgrades, conventional Windows spreadsheets have embraced the data pivoting capabilities popularised by Lotus and CA.

### COMPAQ STORMS HOME IN PORTABLES LEADERSHIP

Compaq has announced the release of the new Compaq LTE Elite. The new release is available with a range of processor capability, from the 486-DX2/40MHz processor to a 486DX4/75MHz. The Compaq Elite comes pre-installed with Microsoft DOS 6.2, plug-and-play ready Windows 3.1, Microsoft Video for Windows 1.1 Runtime and Compaq's own Tabworks. Prices start at \$6,409, for the Elite 4/40C with a 170MB hard drive and go to \$13,006 for the top-of-the-range 4/75C with a massive 510MB hard drive.

#### TOP EXTENSIONS

Google's Chrome browser is finally extending itself. Here are the ones you want to know about.

# Google Chrome's top extensions

Google's Chrome browser finally runs extensions.

Extensions are tiny programs that extend a browser's functionality (and the secret behind the success of Firefox). For those of us addicted to the speed and robustness of the Chrome browser, the good news is that it finally runs extensions. Is this the Chrome OS slowly taking shape in your browser? Here we list APC's favourite Chrome extensions:

**1 AD BLOCKERS**  
We're surprised that for a company whose DNA is based on making money from advertisements, Google allows ad blocker extensions on Chrome. The best ad blocker is Ad Thwart, which lets you define any number of features on a page (not just ads) and block them. You can also block specific ad servers, add to its white list or create custom filters. Ad Block is another similar, highly-rated ad blocker.

**2 BOOKMARK SYNC**  
Although Chrome now has its own native bookmarks syncing for other instances of Chrome browsers, it uses the rubbish Xmarks Bookmarks as the base. Xmarks Bookmark Sync is superior and also syncs with Xmarks on other types of browsers. It's also the most popular bookmark sync extension on Firefox.

**3 EMAIL**  
Autopen rectifies one of the most annoying features of Gmail — the inability to

add signatures with fancy fonts or images. Autopen lets you insert signatures automatically or choose from a selection.

**4 IMAGE EDITING & SCREENSHOTS**  
Aviary is a powerful web-based image editor which has just changed from a fee-based model to a free ad-supported one. In Chrome, it's available through the Aviary Screen Capture extension. The Picnik Extension for Chrome is similar. For taking screenshots, though, none are as good as Webpage Screenshot, which captures the entire web page, not just the visible portion.

**5 PASSWORD MANAGERS**  
There is really only one great one, LastPass, a password manager and form filler that captures all your passwords and encrypts and stores them, so they're available wherever you login.

**6 SEARCH UTILITIES**  
Google Quick Scroll is a fantastically useful extension that lets you jump directly to the relevant bits of a search on a web page, without having to scroll down to find highlighted search terms.

**7 TRANSLATORS**  
Several extensions take advantage of Google's translation services. The best is Google Translate, which automatically detects if the

language of a page you're on is different from the language you're using for your Chrome interface.

**8 UTILITIES**  
We can't do without Session Manager. When you have heaps of tabs and windows open and want them re-opened when you next fire up Chrome, this extension brings them all back. RSS Subscription Extension (by Google) auto-detects RSS feeds on the page and displays an RSS icon which you click for instant subscription.

**9 YOUTUBE**  
Although Google lists ad-blockers on its Chrome extensions list, it does not show video downloaders, so you have to find them via a Google search! Easy YouTube Video Downloader is a pretty good one, enabling you to download YouTube videos in FLV, MP3, 3GP, MP4, 720p and 1080p FULL-HD formats.

Another essential YouTube extension for Chrome is Stop YouTube autoplay, which stops the annoying autoplaying of YouTube videos when you open them in new tabs, but allows pre-buffering. And if you want to watch all YouTube videos at their maximum resolution, YouTube Auto HD saves you having to select the HD options for each video when these are available.

This list is available at [apcmag.com/chrome](http://apcmag.com/chrome), with direct links to the extensions for easy adding to your browser.

# NATIONAL BROADBAND NETWORK

We want our instant high-def movies, apps and video phones now! **David Braue** finds out where the \$43 billion National Broadband Network is at.

**W**ith more than 10 million premises to connect during its eight-year construction phase, the 100Mbit/s national broadband network has to roll out to 4,000 homes every day — including weekends and public holidays.

That's a frenzied pace that will require an army of trained and certified installers, and no small amount of help from homeowners and business owners.

But if this appears to be another home

insulation debacle in the making, rest assured that a year after it was announced, the national broadband network is making progress.

Construction began in September 2009 in Tasmania and February 2010 in Mt Isa, Queensland — one of numerous waypoints in the \$250m Regional Backbone Blackspots Program (RBBP) that will lay over 6,000km of fibre through underserved regional centres.

Other centres will progressively come online as the fibre winds its way across the country, and simultaneous local builds will eventually

see fibre-optic cabling run nearly every street in Australia.

That's not to say that the government company building the network, NBN Co., is having a smooth ride. It has to deal with incompatibilities with fibre-optic systems being installed in many new housing estates, and difficulties running fibre-optic cable into apartment blocks where rights of way are complicated (one solution to the latter problem is to run fibre to the kerb, then deliver end-user connections via VDSL).

## WHAT WE'LL GET

The NBN will run fibre-optic cabling capable of carrying gigabits of data per second over distances of 15km to 20km. Fibre-optic networks have been used for decades but have traditionally been too expensive to roll out on a mass scale; however, recent developments such as PON (Passive Optical Networking) enable a shared architecture that will, in the NBN's case, service 32 homes off a single fibre-optic trunk. There are numerous types of PON on the market, but NBN Co. is leaning towards G-PON.

The fibre-optic cable will run into your property and end up connected to an Optical Network Terminal (ONT), a box that will be attached to the side of your house. The ONT will bring in fibre-optic cable (and, possibly, a connection for the legacy PSTN) and provide a standard Ethernet port into which a wireless router or in-home LAN can be plugged. NBN Co. is still deciding whether the rollout will mandate the installation of an ONT on every house, or whether the fibre will run past the kerb and an ONT only installed when customers sign up.

## WHAT WE'LL PAY

The price of NBN services has been an incredibly contentious issue ever since the project was announced. Numerous analyses have tried to amortise the \$43 billion price tag across the number of premises, made some educated guesses about the likely take up of NBN services, thrown in a few other constants for good measure, and come up with likely end-user pricing of anywhere between \$50 and \$250 per month. NBN Co. has promised some indicative wholesale product pricing before the new financial year is too old. That pricing will be essential, since it will give ISPs a better idea of how much margin they can add onto the wholesale services.

Although the NBN will have a much broader reach than existing cable internet services from Telstra and Optus, their pricing for 100Mbit/s services — which Telstra launched in Melbourne in December priced from \$169 per month, and which Optus will deliver to east-coast capitals before year's end — may set the low-water mark for NBN-fuelled retail pricing. Cross-subsidies could lower the price, and carriers could of course offer slower services or generous quotas at lower prices that would convince customers to abandon their existing ADSL services.



## THE STRATEGY

In announcing the new strategy for the NBN, Prime Minister Kevin Rudd and Communications Minister Senator Stephen Conroy conceded one critical point: fibre networks become prohibitively expensive for the most isolated properties. For this reason, the government lowered its coverage target from 98 percent to 90 percent of Australians, and has committed to servicing "the other 10 percent" with a combination of long-distance wireless technologies — WiMAX, for one — and satellite internet services that can reach anywhere in Australia but tend to have slower speeds and higher latency than fixed connections.

## THE PITFALLS

The run up to this year's Federal election is likely to make the NBN a target for political pot shots. The NBN infrastructure has been repeatedly slammed for its high cost and difficult timeframe. Senator Conroy has also copped criticism: in October, for example, he was left red-faced after highly sensitive Telstra network information was tabled in the Senate. More recently, the appointment of several employees of McKinsey & Co., the consulting firm hired as lead NBN advisor in August 2009, raised eyebrows. In January, the Australian National Audit Office's enquiry into the original NBN process, found Conroy ignored warning signs the \$30m tender process was failing. And in February, Conroy was found to have personally recommended a Labor ex-politician to an unadvertised \$450,000 position with NBN Co.

## THE BUILDER

Charged with building and delivering the national fibre network, NBN Co. will be a wholesaler, undertaking commercial relationships with ISPs and handling the massive task of managing the network on a 24x7 basis. The important thing to understand about the NBN is that end-user customers will have no direct relationship with the company.

In many places, particularly rural and country areas, it will be the first time ISPs have been able to source reliable wholesale services from anybody but Telstra. This is expected to result in faster and cheaper internet services for consumers, as competition heats up and ISPs no longer face the Hobson's choice of paying high Telstra wholesale prices or building their own infrastructure. The network is expected to subsume much of Telstra's existing landline customer base, eventually making the current copper network obsolete.

At press time, NBN Co. was envisioning delivering just three wholesale products:

**ELAS** (Ethernet Line Access Service) will link customers' homes and businesses with their local POI (Point of Interconnection), a jump-on-point to the NBN's network comparable to the exchange on Telstra's PSTN. ELAS is a Layer 2 service that will carry any kind of Layer 3 data protocol customers want to run over it.

**ELBS** (Ethernet Line Backhaul Service) will link the customer's POI with a distant POI that connects to the ISP's own network, carrying traffic over tens or hundreds of kilometres of fibre-optic backbone.

**EMCS** (Ethernet MultiCast Service) will carry content — for example, videos broadcast over IPTV channels — to large numbers of customers at once without congesting the network; this service requires special handling by the switches that make up NBN Co's network.

### IF YOU BUILD IT...

With the rollout of the NBN, Telstra will lose even more of the stronghold they have on the country's communications.

## AND TELSTRA?

Rolling out the NBN will require some sort of pact with Telstra, which owns a nationwide network of underground conduits — access to which would make the NBN much cheaper and easier to roll out. New Telstra CEO David Thodey has proven more receptive to government overtures than his bellicose predecessor Sol Trujillo but — despite recent Telstra concessions that effectively put the sale of its local-loop network on the agenda — months of negotiations have produced little more than the predictable political waffle. Project-managing such an extensive network involves strict scheduling controls, fostering union relationships, and the ever-present likelihood of all sorts of problems. The upcoming election will put political pressure on the project and, in the event of a Coalition win, could potentially see changes in scope and direction — although the Opposition have not yet spruikened any NBN alternatives and may, given NBN Co.'s momentum, end up having to throw in the towel.

### TIME TO SHARE

Telstra has the power to make the rollout of the NBN a much quicker and cheaper event — but will they?

**epinions@acpmagazines.com.au**

**THIS  
ISSUE'S  
WINNER**

Come on, have your say! We want to hear what you think. Add to these discussions or email your views (in fewer than 250 words) to [epinions@acpmagazines.com.au](mailto:epinions@acpmagazines.com.au). All correspondence becomes the property of APC and is subject to editing. Letters must include writer's full name, street address, suburb, state and phone number to be considered for print publication and to be in the running for Letter of the Month prizes. Address and phone details will not be published.

## Letter of the month

Scott wins a TP-Link Wireless N Router and Adapter bundle worth over \$200.



### FREE TRAINING

I liked the section about Best (mostly free) Apps in the February 2010 issue. If you want to take that a step further, did you know about Best (free) Training?

Two notable web sites are Microsoft My Learning ([tinyurl.com/ygk0fk](http://tinyurl.com/ygk0fk)) and Channel 9 ([tinyurl.com/yhlvmq2](http://tinyurl.com/yhlvmq2)).

I've completed most of the free My Learning content and a

number of the paid ones as part of my memberships and subscriptions.

The most recent memorable course was on how to use the Ribbon Interface in Office 2007. Why do a course on the ribbon? Because once they have explained where, how and why the ribbon is the way it is, one can be 95% more productive with it, plus you get to print a nice certificate for your effort.

The Channel 9 site has basic "here is a product" feature you

will like" material and university level programming content and MIT Open Courseware ([tinyurl.com/2t2rfj](http://tinyurl.com/2t2rfj)) is also good, even if you don't get all the lecture notes on most subjects.

The bottom line is that any way that helps educate users (and us who help users) for free must be worth something to spread the news about.

**Scott Anderson**  
Strathpine, Qld

Our CAPTCHA letter of last month generated so many 'gotcha' responses we just had to print a selection.

### WHAT OS?

We get your mag at work and it's refreshing to pull away from online sources and read a hard copy mag.

I must comment on Jenneth Orantia's article on 'Which OS?' While I understand that Jenneth probably focused on the most popular OSs currently in the market, it's a little strange to have completely missed what Nokia are trying to do with their OSs.

Nokia's (soon-to-be-released in Australia) N900 is a smartphone that runs on the Linux Maemo OS system. Nokia has been using the Maemo OS since 2005 on its tablets ([tinyurl.com/knjptu](http://tinyurl.com/knjptu)).

With the S60 platform ageing and the push towards a richer multimedia experience, Nokia will shift its high-end N series phones towards this OS. It was surprising that Jenneth didn't mention this OS! Did it not come up during research?

**Shawn Low**  
Melbourne, Vic

### RUN ANYTHING

I bought the UPTOOLS software way back in 1994 to create EAN/ISBN barcodes, and just succeeded in installing it in Windows 7. That is the fifth operating system it has worked under.

Of course, because my version of Win 7 is 64-bit, I had to install it in XP mode but it starts directly from the start menu, or from an icon on the task bar.

I wrote to its makers, Azalea Software to say thanks and the

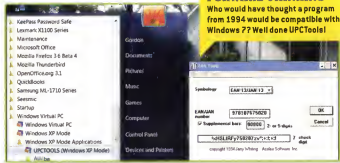
owner replied to say that it warmed his heart to hear it.

The clue to getting it listed in Windows 7 is that you need a shortcut in the "All users" section of the XP start menu folder. The attached screenshot proves that a 1994 program can work in Windows 7 — if it was written well in the first place.

**Gordon Waaf**  
Hastings, Vic

### FORWARD THINKING

Who would have thought a program from 1994 would be compatible with Windows 7? Well done UPTOOLS!





## EDITORIAL

Editor Tony Samo [tsamo@apcmagazines.com.au](mailto:tsamo@apcmagazines.com.au)  
 Deputy Editor Melanie Pike [mjpike@apcmagazines.com.au](mailto:mjpike@apcmagazines.com.au)  
 News/Online Editor Dan Wain [dawain@apcmagazines.com.au](mailto:dawain@apcmagazines.com.au)  
 Technical Editor Nick Bore [nibore@apcmagazines.com.au](mailto:nibore@apcmagazines.com.au)  
 DVD/Chip Chat Editor Peter Dockrill [pdockrill@apcmagazines.com.au](mailto:pdockrill@apcmagazines.com.au)  
 Contributors: James Bannister; Shane Barter; David Brauer; Julian Backnell;  
 Joe Cassels; Troy Coleman; David Flynn; Mike Le Voi; Jamie Middleton;  
 Ashton Mills; Ash Nakawalla; David Neiger; Jenneth O'neill;  
 Matthew Richards; Bennett Ring; Nick Ross; Mike Williams; Stephen Wilkins.

Editorial & Marketing Coordinator Helen Chen  
[hchen@apcmagazines.com.au](mailto:hchen@apcmagazines.com.au)

## DESIGN

Art Director Chris Zammitt  
 Designer Martin Vine  
 Photography Chris Zammitt, Getty Images

## PRODUCTION

Sub-Editors: Melanie Pike, Peter Dockrill  
 Production Controller Peter Woodward

## MULTIMEDIA

DVD Editor Peter Dockrill

## ADVERTISING

National Sales Manager Fleur Porter  
[fporter@apcmagazines.com.au](mailto:fporter@apcmagazines.com.au) (02) 9288 9147  
 Sales Executive Rhyl Howse  
[rhowse@apcmagazines.com.au](mailto:rhowse@apcmagazines.com.au) (02) 9288 4662  
 Account Executive Vic Peter Flanagan (02) 9222 5188  
 For further advertising information visit  
[www.apcmag.com.au/advertising](http://www.apcmag.com.au/advertising)

## MARKETING

Marketing Brand Manager Kat Galang

## CONTACTING US

Email [apc@apcmagazines.com.au](mailto:apc@apcmagazines.com.au) Web [www.apcmag.com.au](http://www.apcmag.com.au)  
 Phone (02) 9288 9100 Fax (02) 9287 4909  
 Postal PO Box 4086, Sydney NSW 1501  
 Street Level 18, 66 Gresham Street, Sydney 2000  
 For Watchdog and Epinions You must include your full name, address  
 and B/H contact telephone number; otherwise it cannot be considered for  
 publication. [watchdog@apcmagazines.com.au](mailto:watchdog@apcmagazines.com.au)  
[epinions@apcmagazines.com.au](mailto:epinions@apcmagazines.com.au)

## REPRINTS AND COPYRIGHT

Contact: Helen Chen [hchen@apcmagazines.com.au](mailto:hchen@apcmagazines.com.au)

## SYNOICATION INQUIRIES

London John Sater  
 Phone 44 20 7812 6527 email [jsater@magpub.com](mailto:jsater@magpub.com)  
 Sydney Greg Allen-Walters  
 Phone 612 9282 8808 Email [gallen-walters@apcmagazines.com.au](mailto:gallen-walters@apcmagazines.com.au)  
**FOR ALL SUBSCRIPTIONS SALES AND INQUIRIES**  
 Visit: [www.magpub.com.au](http://www.magpub.com.au) Email: [magpub@magpub.com.au](mailto:magpub@magpub.com.au)  
 Pk 13 61 16 between 8am to 6pm (EST) Monday-Friday  
 Mail: Magshop, GPO Box 5252 Sydney NSW 2000  
 One year's subscription is just \$79.95! For full details see page 34.



APC magazine is published by APC Magazines –  
 a division of PBL Media Pty Limited

## APC

Publishing Director, Morn's, Specialist & Custom Phil Scott  
 National Group Sales Manager Andrew Cook  
 Director Sales, Morn's, Specialist & Custom Louise Barrett  
 Publisher, Morn's & Specialist Michael Rodowski  
 Designer in Chief Gian Smith  
 PBL Media Chief Executive Officer Ian Law

## PRODUCT SUBMISSIONS

APC wants to hear about products, services and innovations. However,  
 APC is under no obligation to review or return unsolicited products.

APC is published by APC Pty Ltd, a division of APC Magazines Ltd (ACN 153 273 546). Printed by Webstar. Material contained within APC is protected under the Commonwealth Copyright Act 1968. No material may be reproduced in part or in whole without the written consent of the copyright holders. Distributed by Network Distribution Company, 54 Pitt Street, Sydney NSW 2000. Phone: (02) 6282 8777. Articles in this issue transferred or reproduced from PC Plus are copyright or licensed by Future Publishing Limited, a Future plc group company, UK 2007. All rights reserved. For more information about magazines published by the Future plc group, contact [www.futuremagazines.com](http://www.futuremagazines.com)

## YOU'RE GROUNDED

We don't suggest grounding your arrestors to your guttering, unless you want live down pipes that is!

## CABLE LOSS

I have to question David Neiger's engineering qualifications (Linking two homes over Wi-Fi) as they do appear to be sadly lacking. He was obviously impressed with the size of the "very much over-engineered" antenna cables being run. Has David never heard of cable loss? The larger/thicker the cable the lower the loss (generally) and hence the more signal to the antenna and at the receiver end. The photograph of the installed antenna shows what looks like a lightning arrestor. Arrestors need to be connected to a good ground, independent of the house electrical system. Only an idiot would suggest connecting it to the guttering! Has David never heard of plastic guttering? What about safety? Lightning does funny things, David, and downpipes are within human contact. Join Peter Garrett's shonkey foil installers!

Keith Aggett  
 Faulconbridge, NSW

## CAPTCHA EXPLAINED

As a lecturer of mathematics for over 33 years, I cannot let the comment by Peter Torning in the March 2010 issue of APC pass without comment. He is not alone in his misunderstanding. BODMAS is a handy mnemonic for remembering the rules of arithmetic, but it is simply a guide when you already know the rules. In its simplest form it simply says that Brackets take precedence Over (Division and Multiplication) which take precedence over (Addition and Subtraction). So 3-1+5 does yield 7 as addition and subtraction have the same precedence and are performed in left to right order. However 3-1x2 will give answer 1, as multiplication has higher precedence over subtraction. Any calculator with algebraic precedence will give these answers.

Rod  
 Canberra, ACT

## DAUGHTER MISCONCEPTION

If the writer were paying attention in that early high school maths lesson, he would have learnt that addition and subtraction have equal precedence and should be calculated left to right unless parenthesis dictate otherwise. Likewise with multiplication and division. I shudder to think of the educated professionals out there with the same misconception — structural engineers, surveyors, programmers, bank managers...

Steve Marshall  
 Giralang, ACT

## CAPTCHA LESSON

Perhaps the message we can take from the CAPTCHA item is that mathematical equation CAPTCHAs, have a much likelier potential to be misunderstood than the traditional alpha-numeric ones.

Stephen Chester  
 Camberwell, Vic

Editor's note: This issue attracted more feedback than any letter published in *Epinions* in recent years. It's made us appreciate that when it comes to mathematical equations published in APC, it's important that we get them right. To be fair, the writer, Peter Torning, did contact us shortly afterwards to rectify his mistake, but then the magazine was already rolling off the presses. The good thing about the responses [even the ones that accused us of being full of "brown smelly stuff"] is that we now have a list of several mathematicians we can call on!

## TASTY CLICHE

In your March issue, on page 47, the writer says: "The power load of these chips must be taken with a grain of salt."

Now I'm hungry.

Casey Bennetto  
 Abbotsford, Vic



**apcenduser@acpmagazines.com.au**

Do you work in the IT industry and are forced to deal with inept and clueless end users on a daily basis? If you have an interesting or amusing story, email us at [apcenduser@acpmagazines.com.au](mailto:apcenduser@acpmagazines.com.au). All correspondence becomes the property of APC and is subject to editing. Letters must include writer's full name, street address, suburb, state and phone number to be considered for print publication and to be in the running for prizes. Address and phone details will not be published.

## Accidentally showing

Robert Mehta, a computer salesman, was at a business meeting recently when he saw a colleague accidentally display his video surfing trail on his notebook during a presentation. "Like the Macquarie Bank guy, there was nothing particularly nasty on there, but it was on the projector and people snickered," says Mehta. "It made me wonder why software companies treat us like dumb users by including reminders of file history and web sites surfed at every turn. Case in point is the new Windows 7 Start Menu. Application icons now display recent files opened. Is that really necessary?" We see

Robert's point, but we're not sure we agree because history trails enhance usability. Mehta's friend performed what's known in the industry as an "accidental showing", but he got off lightly compared to a priest in Pennsylvania just two months before, who was using his computer to show parishioners an informational DVD about the annual diocesan fundraiser. Unfortunately, the priest clicked the wrong button and the media player switched to a set of digital photos, which church officials later said consisted of "minimally attired adult males." The priest was relieved of his duties.

### THE PROBLEM WITH DVD DRIVES

IT manager Brian Hand was recently called to help a staff member who was frantically trying to copy data from a CD to meet a deadline. The staff member told him matter-of-factly that the DVD drive on her new Dell PC was faulty and refusing to read her CD. Trying to assist him with her own analysis of the problem, she told him the disc worked in another PC and that Hand had to fix or replace her PC



immediately as she could not work with faulty equipment.

Thinking he was dealing with someone who knew her way around computers, Hand was amazed when he got to her workstation and realised what the problem was. Hand says: "Her PC has a desktop case and when she had tidied her desk she had stood the PC on its side. When finished, she returned it to its usual place but upside down. She then tried to put the CD

on the bottom of the drawer, so it was being ejected as the drawer closed." Hand nonchalantly flipped the case over and magically fixed the problem.

### NOKIA CABLES

Joshua Riesenweber works for an IT company and manages several clients. He recently got a call from one who complained that her email wasn't working. Riesenweber took her through the usual diagnostic steps to find the fault, but all he could determine was that she didn't have access to the internet nor to a mapped server drive. "I got her to check that the network cable was plugged in, but she said there was no activity light. I got her

to trace the cable back the small switch at the desk. She said it was plugged in but there were no lights." After running her fruitlessly through more tests, he figured something must have happened to the switch and it would need replacing. He headed out on site to have a look. "When I got there, everything was as she said, so I went to change over the switch. As I unplugged the switch, the label on the power adapter caught my eye: it said Nokia! Someone had unplugged the switch to charge their mobile, then got the adapters mixed up. I looked around and sure enough, the adapter was on the desk, and it all worked when I swapped it out."



## WINNERS GET THIS

Whether you are a digital photography nut, into designing avatars or need a more intuitive way to mark up documents, the Bamboo Fun tablet from Wacom is for you. It uses a pressure-sensitive pen to navigate, draw, write, retouch, and paint. Adobe Photoshop Elements and Corel Painter Essentials come bundled for beginners, while confident users will find the Bamboo Fun unlocks the advanced pressure-sensitive features in their favourite applications. RRP: \$299 (Bamboo Fun Medium). Available from [www.wacom.com.au](http://www.wacom.com.au). This month's winner is Brian Hand.

# World Leaders *in* Fighting Malware

## Kaspersky Security

### Leading Anti-Malware Provider for Business Users

Kaspersky Open Space Security is our approach to trans-perimeter network security where protection extends beyond the workplace to reach remote users and an increasingly mobile workforce.



# KASPERSKY



- One solution for all network nodes and platforms
- Rapid response
- Protection for laptops everywhere
- Anti-rootkit technology
- Protection from identity theft
- Rollback of changes made by malware
- Self-defence against attacks
- Centralised administration
- Compatibility with third party solutions
- Free market leading support

  
microbe  
Distributor



**watchdog@acpmagazines.com.au**

Has an IT vendor or telco stuffed you around? Let us know about it and we'll chase them for a solution on your behalf. Letters sent to **watchdog@acpmagazines.com.au** must include the writer's full name, street address, suburb, state and phone number to be considered for print publication (please also include details such as invoice numbers and people you've spoken to). Address and phone details will not be published. All correspondence becomes the property of APC and is subject to editing.

## The waiting game

Watchdog tries to assist a reader when his online goods never turn up, but finding 'Mr Gadget' proves to be easier said than done. . .



**The single biggest complaint now being received by Watchdog is from people who have ordered goods**

**online and then have to wait months for delivery. If they get them at all. It seems all too easy to set up an online store and not deliver goods on time once the customer's have paid for them.**

Typical is the experience of Jonathan O'Brien, of Melrose Park, NSW, who bought three items from online site **mr-gadget.com.au**: an SOHC card, RC helicopter and USB vacuum. O'Brien says he was led to believe the first two were in stock and the last on back order.

The first thing to arrive was the helicopter. "It arrived broken, and broken in such a way that it was broken before it was even boxed. It would have been impossible to break the internals in such a way inside the packaging."

The SO card, O'Brien was told, was not in stock and on back order. "I needed the SD card for Christmas, and with over month to go I did not worry that it was on back order. However after two weeks I started to get worried so I rang them to cancel the back order and advised them that I had bought one elsewhere. But they did not answer so I left a detailed voicemail including my order number, the reason, and my contact details, and also advised them at the same time the helicopter was broken and asked for an RA (Return

### Contact Me

You can catch me via email on **me@arnoldaranez.com**.

Due to the thousands of emails I receive on a daily basis (mostly spam), I may not answer your mail right away, but will endeavour to reply as soon as possible.

As mentioned on my About page, you can connect with me via:

Plurk | Twitter | Friendfeed | StumbleUpon | Digg | LinkedIn

### Share and Enjoy:



**DON'T LEAVE ME...**  
...hanging on the telephone? Lots of APC readers aren't getting their paid-for goods (or responses from vendors).

Authorisation number).

"Early January, two months after my original order of in-stock items, they sent me the SO card, having ignored all phone calls and emails. So on 7/1/10 I emailed them again asking for an RA on my broken helicopter and an RA on the useless SD card that I cancelled after being told the in-stock item became a back-order. I have heard nothing back. Note — at this point I still have not received the USB vacuum either."

O'Brien then went to the NSW Office of Fair Trading. The department advised him that, after four weeks of trying, "Fair Trading has made numerous attempts to contact the trader via telephone and written correspondence but has been unsuccessful in obtaining

a response. Therefore mediation of your complaint has not been possible."

O'Brien was advised to apply to the NSW Consumer, Trader & Tenancy Tribunal (CTTT) to have the matter resolved at a hearing of the tribunal. O'Brien wants other APC readers to be aware that if a consumer advocacy government organisation is unable to contact a vendor, the only way to force a resolution is to go through a court or tribunal with legally enforced orders. "Please let all the readers be warned that if they have no way of contacting Mr Gadget in the event of any issue, and that Mr Gadget ignores even the Office of Fair Trading's communications, any dealings with them requires a subpoena through the courts."

APC joined in the efforts to secure a response from Mr Gadget. We tried to contact the owner of the Mr Gadget site, who according to domain records is Mr Arnold Arvaney of Melbourne. Emails to the contact email on the site went unanswered, so we tried to locate Mr Arvaney by other means.

We found that Mr Arvaney is actually a heavy user of social networking media, which should have made it easy enough to contact him. On his Arnold Arvaney blog, where he lists the Mr Gadget site as one of his interests, he provides ways to contact him via Twitter, Friendfeed, LinkedIn, Plurk, StumbleUpon and Digg. We tried some of these too, but as we went to press, we had still not received any reply. **CTTT**

## RAPTOR 18.4"

18.4" 1920x1080  
SLI GTX285M  
Core i3/i5/i7  
Up to 8Gb DDR3 RAM  
Up to 3 Hard Drives  
Windows 7

FROM \$4799



## JUGGERNAUGHT 17.3"

17.3" 1920x1080  
GTX280M  
Core i3/i5/i7  
Up to 8Gb DDR3 RAM  
Up to 2 Hard Drives  
Windows 7

FROM \$3599



## RAPTOR 15.4"

15.4" 1920x1080  
GTX260M  
Centrino Dual/Quad Core  
Up to 8Gb DDR3 RAM  
Windows 7

FROM \$2749



## TERMINATOR P55

i5/i7 Quad Core  
Overclocked up to 4Ghz  
Up to 8Gb DDR3 RAM  
Liquid Cooling  
P55 Motherboard  
Crossfire or SLI  
Windows 7

FROM \$1499



## BUDGET GAMER

Dual/Quad Core  
P45 Motherboard  
4Gb DDR2 RAM  
Ati/Nvidia Graphics  
Windows 7

FROM \$849



## NET-LITE PC

Dual Core CPU  
G41MT Motherboard  
Up to 4Gb DDR3 RAM  
Up to 512Mb Graphics  
Windows 7

FROM \$749



**Gaming Systems  
now available with  
Asetek Liquid  
Cooling**



**Get BF: Bad  
Company 2  
free with any  
Gaming System  
or Laptop**



**All P55/X58 Systems  
include USB3.0**



**FREE SHIPPING AUSTRALIA-WIDE**

**3 YEAR WARRANTY ON ALL SYSTEMS AND LAPTOPS**

**NO CREDIT CARD SURCHARGE**

**ALL SYSTEMS AND LAPTOPS ARE FULLY CUSTOMISEABLE**

Enter Coupon Code: APCAPRIL10 when checking out to receive \$50 off any System or Laptop



# SUBSCRIBE!

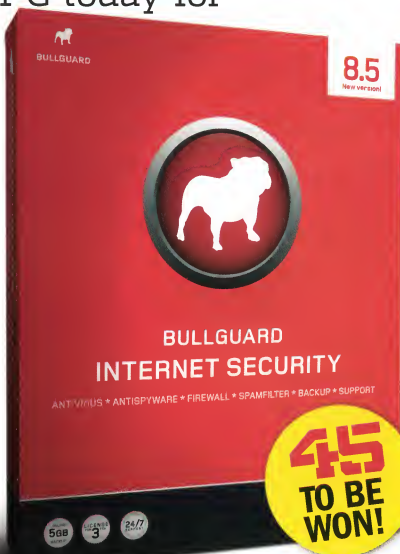
## Subscribe or renew your current subscription to APC today for your chance to win 1 of 45 copies of BullGuard Internet Security Suite, valued at \$99.95 each!

BullGuard Internet Security is built exclusively for the everyday user, putting safety, simplicity and an easy-to-use design first. That's why 10 million users worldwide travel the web safely with BullGuard.

### What do you get?

- Complete, award-winning internet security
- Award-winning user-friendly design
- Constant security software updates, with no loss of computer performance
- 24/7 support in plain English – the highest score in the Which? 2009 support survey
- SGB backup to protect all your most valued files and photos

For more information please visit  
**www.bullguard.com**



**TERMS AND CONDITIONS** 1. Information on how to enter and prize details form part of these Terms and Conditions. Participation in this promotion is deemed acceptance of these Terms and Conditions. 2. Entry is only open to residents of Australia who subscribe or renew their subscription to APC magazine between 12/03/2010 and 20/04/2010. Entry is automatic upon and subject to the correct use of a valid credit card or, if payment is made by cheque, subject to the cheque being cleared for payment during the promotional period. Subscriptions are to be sent by mail to APC magazine, Reply Paid 4967, Sydney, 2001, or made by telephone on 136 116; or via the internet at [www.magshop.com.au/apc](http://www.magshop.com.au/apc). Employees (and their immediate families) of the Promoter and agencies associated with this promotion are ineligible to enter. This promotion is not valid in conjunction with any other promotion or offer. If the subscription is a gift, only the gift recipient will be entered into the prize draw. 3. The Promoter reserves the right, at any time, to verify the validity of entries and entrants (including an entrant's identity, age and place of residence) and to disqualify any entrant who submits an entry that is not in accordance with these Terms and Conditions or who tampers with the entry process. Failure by the Promoter to enforce any of its rights at any stage does not constitute a waiver of those rights. 4. By subscribing to this APC Magazine Ltd magazine title you acknowledge that you understand that the prize and gifts that may be available with non-subscriber copies may not be provided with subscriber copies, depending on the sole discretion of APC Magazines Ltd. 5. There is a limit of one entry per subscriber or renewal to APC Magazine. 6. Promotional period commences 12/03/2010 and closes 23:59 EOST 20/04/2010. The draw will take place at 11:00 EOST at 54-58 Park Street, Sydney NSW 2001 on 30/04/2010. The winners will be notified by mail (a contact details provided in the subscription), and their names published in The Public Notices section of The Australian on 05/05/2010. Promoters' decision is final and no correspondence will be entered into. 7. The first 45 valid entries drawn from all entries received will win the BullGuard Internet Security Suite valued at \$99.95 each. Prize does not include any ancillary costs associated with redeeming the prize. These are the responsibility of the winner. 8. The total prize pool is valued at \$4497.95. Prizes are not transferable or exchangeable and cannot be taken as cash. 9. If any prize is unavailable, the Promoter, in its discretion, reserves the right to substitute the prize with a prize of the equal value and/or specification, subject to any written directions from a regulatory authority. 10. A draw for any unclaimed prizes may take place on 2/08/2010 at the same time and place as the original draw, subject to reference to all relevant terms and conditions of entry and any directions from a regulatory authority. Winner's names will be published in The Australian on 5/08/2010. 11. Except for any liability that cannot be excluded by law, the Promoter (including its officers, employees and agents) excludes all liability (including negligence), for any personal injury or any loss or damage (including loss of opportunity), whether direct, indirect, special or consequential, arising in any way out of the Promotion, including, but not limited to, where arising out of the following: (a) any technical difficulties or equipment malfunction (whether or not under the Promoter's control); (b) any theft, unauthorised access or third party interference; (c) any entry or prize claim that is late, lost, altered, damaged or misdirected (whether or not after their receipt by the Promoter) due to any reason beyond the reasonable control of the Promoter; (d) any variation in prize value to that stated in these Terms and Conditions; (e) any tax liability incurred by a winner or entrant; (f) redemption of a prize and/or (g) participation in the promotion. 12. Any costs associated with accessing the promotional website is the entrant's responsibility and is dependent on the internet service provider used. Any contact details entered incorrectly on the website shall be deemed invalid. 13. If this promotion is interfered with in any way or is not capable of being conducted as reasonably anticipated due to any reason beyond the reasonable control of the Promoter, the Promoter reserves the right, in its sole discretion, to the fullest extent permitted by law to (a) disqualify any entrant; or (b) subject to any written directions from a regulatory authority, to modify, suspend, terminate or cancel the promotion, as appropriate. 14. All entries become the property of the Promoter. The collection, use and disclosure of personal information provided in connection with this competition is governed by the Privacy Notice (see contents page for location in this issue). 15. The Promoter is APC Magazines Limited (ABN 18 053 273 545) of 54-58 Park Street, Sydney NSW 2001. 16. Authorised under NSW Permit No. LTPS10/00305, APC Permit No. TP10/00163.

WIN ONE OF 45 COPIES OF BULLGUARD INTERNET SECURITY SUITE!

## Subscribing gives you better value!

- **SAVE** more than \$39 off the retail price — just \$79.95 for 12 issues.
- **FREE** delivery to your home or office each month.
- **PLUS** — subscribe by April 20 2010 for your chance to win one of 45 copies of **BullGuard Internet Security Suite**, valued at \$99.95 each!



**SAVE \$39.45**

off the newsstand price by subscribing today!

### 3 EASY WAYS TO SUBSCRIBE

**VISIT**

[www.magshop.com.au/apc](http://www.magshop.com.au/apc)

**SEND**

back the coupon provided

**CALL**

136 116 and quote "M104APC"

**HURRY!**

Offer ends April 20th, 2010

YES, I WOULD LIKE TO SUBSCRIBE TO APC MAGAZINE FOR:

- ☐ Myself ☐ Gift Recipient  
☐ Australia: 1 YEAR (12 issues) \$A79.95 – SAVE \$39.45  
☐ New Zealand: 1 YEAR (12 issues) \$A99.00  
☐ Australia: 2 YEARS (24 issues) \$A139.00 – SAVE \$99.80

MY DETAILS:

Mrs/Ms/Miss/Mr

Address \_\_\_\_\_

State \_\_\_\_\_

Postcode \_\_\_\_\_

Country \_\_\_\_\_

Telephone (daytime) ( ) \_\_\_\_\_

Email (optional) \_\_\_\_\_

GIFT RECIPIENT'S DETAILS:

Mrs/Ms/Miss/Mr

Address \_\_\_\_\_

State \_\_\_\_\_

Postcode \_\_\_\_\_

Country \_\_\_\_\_

Telephone (daytime) ( ) \_\_\_\_\_

TO SUBSCRIBE BY CHEQUE:

Complete this coupon and send along with your cheque to Magshop, Reply Paid 4967, Sydney NSW 2001

TO SUBSCRIBE SECURELY BY CREDIT CARD:

visit: [www.magshop.com.au/apc](http://www.magshop.com.au/apc)

□ Please do not provide information about me to any organisation not associated with the offer. By including your email address you consent to receipt of any email regarding this magazine and other emails which inform you of APC's other publications, products, services and events and to promote third party goods and services you may be interested in. Please see contents page for the location of the Privacy Notice. Offer expires 20/04/10.

**apc**

POSTAGE FREE TO:

APC, Reply Paid 4967

Sydney NSW 2001

**adma**

**magshop.com.au**

direct marketing code compliant

M104APC



# DOWNLOAD SECRETS!

The internet is full of videos. You just need the right knowledge, tools and addresses to find it.

40



HP's Media Servers have been the benchmark by which all servers have been measured. This Server is more device than disk bay, but a great start for those with modest media needs.

The biggest let down is the lack of expandable storage. The higher model adds in drive bays, but this one only allows more gigs with USB external disk drives.

At \$499 it's not cheap. You can build your own for less, but you'll miss out on the space saving design and top notch additions that HP have worked in.

It has 1TB of hard disk space and a low power, low noise Atom processor, but the killer app is the customisations HP have done to the basic WHS software.

## REVIEWS

Inspire Vitesse GXi5	23
HP MS210 All-in-One PC	24
HP LX197	24
TI Deluxe 540	25
ASUS K52Jr	26
HP Mini 210	26
MSI HD 5770 HAWK	27
Sapphire HD 5450 512MB GDDR3	27
Corsair Dominator GTX	28
G.Skill PC3-17600 PI Series	28
HIS HD 5750 1GB iCooler IV	29
WD MyBook 3.0	29
Sapphire HD 5670 1GB GDDR5	30
ASUS uBoom 2.1 Soundbar	30
Belkin Double N+ wireless	31
Netgear RangeMax	31
HP Officejet 6000	32
FujiXerox Phaser 310 MFP/S	32
Sony Bloggie HD webcam	33
Canon EOS 550D	33
Pioneer BDR-205	34
DViCO TiVX M6600-N	34
Panasonic TH-P5421A plasma	35
Typekit	36
Quicken Personal Plus 2010	37
Best Apps	38
Download secrets	40
Best Tech	66
Master builder: Pro-Build	70
Master builder semi-finals	72
Master builder: Best builds	76

It's powerful, sure — but is it the best buy for the money?



7  
10

# Enspire Vitesse GXi5

You could say our first impressions were good.

Enspire Digital   
www.enspiredigital.com.au   
\$1,999

Fast; quiet;   
USB 3.0.

Not fast enough.

## SPECIAL FEATURES

GA-P55A-UD3 motherboard  
4GB of RAM  
Core i7 860 CPU  
USB 3.0

Our dealings with Enspire have shown the company to be one of the most adept performance PC makers in Australia. It knows how to squeeze high performance out of stock hardware while keeping everything stable enough to be sold commercially. It also has a habit of being very neat, and the insides of the Vitesse show that care and attention have been used in its construction, with the cables hidden as much as possible.

The system has a strong Gigabyte orientation with a variant of the GA-P55A-UD3 motherboard. This supports USB 3.0, which will significantly speed up file transfers once companies have invented devices to work with it. Seated in this is 4GB of RAM, a Core i7 860 CPU and a 1GB WD Caviar Black hard disk. A Gigabyte Ddin 800W PSU powers everything.

The 860 pretty much replaced the popular Core i7 920 (at least in terms of price point). It's a quad-core part with HyperThreading and is stock clocked at 2.8GHz. When some cores aren't required it shuts them down and boosts the frequency of those remaining up to 3.46GHz without sacrificing stability. However, Enspire has permanently overclocked the

860 to 3.67GHz. History tells us that this should be stable and the large heatsink fan gives us confidence that it will be.

But it's all about performance and the Vitesse scored a decent 9,549 in PCMark Vantage. That's virtually identical to TI Computers' EP 587D, which uses a lesser Core i5 750 chip at stock speeds. They're both very fast scores but how they get there is different. The TI uses a 10,000rpm VelociRaptor hard disk to boost its score. The Vitesse has a less-fast but more capacious hard disk. It will also be faster in apps that are tailored for HyperThreading, as this is absent on the 750. This said, there's still potential to overclock TI's machine.

Both systems use AMD's Radeon HD 5870 graphics card. Once again the benchmark scores were similar with the Vitesse coming in at 17,065 — less than 200 points behind TI's system. It will happily play all games on the market at high detail settings.

It doesn't come with any peripherals but most buyers of such a tweaked PC will either have their own or choose them at time of purchase. The Antec Three Hundred case looks strong and monolithic. It's not the

glitziest case in the world, mind.

Connectivity is excellent thanks to the USB 3.0 — but only two ports on the back are compatible. The other eight USB ports are USB 2.0 and they're joined by Gigabit LAN, a PS/2 port plus optical and coaxial S/PDIF out ports. The graphics card has two DVI ports, HDMI and DisplayPort. At the front are the standard two USB ports and audio jacks. A DVD writer keeps them company.

If you want to upgrade there's space for five more hard disks and two more 5.25in drives. On the motherboard there are three spare PCI slots, a PCI 1x slot and room for another graphics card. The CPU's fan overhangs the memory slots, so adding extra RAM might be a problem.

Windows 7 64-bit rounds everything off and leaves this as a well-rounded, performance PC. However, for \$350 more you get a similarly-speedy machine from TI with an excellent monitor plus keyboard and mouse. It's close, but we couldn't help be a bit disappointed by the Vitesse's speed. Being pipped by a value system simply isn't quite good enough this month.

Nick Ross

7  
10

## HP LX197

Bringing the server out of the lab and into the living room.

HP ★  
www.hp.com ©  
\$499 \$

Easy to use; great file support. ✓

Expensive compared to the US version; can't upgrade storage. ✗

### SPECIAL FEATURES

Intel Atom 1.6GHz CPU  
1GB DDR2 memory  
1TB hard drive space  
(SATA 5,400rpm)

Media servers have typically been the domain of hardcore geeks and uber nerds. HP wants to change all this, understanding that today's families have hundreds of gigabytes of music, movies and photos, all needing to be shared across the family's PCs and notebooks. The LX197 is HP's attempt at making media servers less about Computer Science degrees, and more about affordability and usability for the average human being.

Which makes the lack of setup documentation a very strange oversight. While we knew to disable our firewall before looking at our Network Devices to discover the LX197 residing on our network, most mums and dads wouldn't have the fuzziest. And while the Home Server Connector Troubleshooter held our hands through the process, most oldies would prefer a piece of paper beside them as well.

Once it's set up, the LX197 is an impressive piece of kit. Using an Intel Atom processor, it's quieter than a

sneaky teen starting their Torrent downloads after midnight. A Terabyte of hard drive space will last a few months depending on your affinity to Pirate Bay, while four USB ports allow easy transfers to USB devices. A Gigabit Ethernet connection will make the most of your Gigabit LAN, if you're lucky enough to have such a speedy network.

It supports a wide range of file types, and it'll automatically search your networked computers for media files. Unfortunately, the control over this function is quite limited, with no option to set this for a specific time of the day. It'll work as an iTunes server, and can also feed you your media fix wherever there's a net connection, thanks to remote access.

If you're part of a household where sharing media files requires frequent use of the

sneaker net or laborious file transfers, the LX197 offers a well-rounded, affordable option.

Bennett Ring



6  
10

## HP MS210 All-in-One PC

Another iMac-alike contender enters the ring.

HP ★  
www.hp.com ©  
\$1,199 \$

Cheap for an All-in-One; decent specs. ✓

Trounced by the iMac in all regards. ✗

### SPECIAL FEATURES

Windows 7 Premium  
AMD Athlon 64 X2  
3250e (1.5GHz)  
2GB DDR2

If you're never going to upgrade, and live in a Sydney shoebox worth \$10,000 per square meter, an All-in-One PC can be an attractive computing option. Apple has this market well and truly stitched up with the sexiest slab of aluminium on the desk top, the iMac. For HP's All-in-One MS210 to succeed, it needs to offer better hardware, at a cheaper price, in a sexier case than the iMac. That's not just an up-hill battle, it's more like an up-cliff struggle.

While the MS210 isn't ugly by any stretch of the imagination, it's not even close to the supermodel good looks of the iMac. The monitor is a few inches smaller, at 18.5in versus the iMac's 21.5in display. It's not quite a poorer display due to the size either — the iMac has much better colour reproduction and contrast.

Inside, the iMac's speedy 3.06GHz Core 2 Duo runs rings around the MS210's AMD Athlon 64X2, which ticks by at half the speed, a mere 1.5GHz.

It's not even a close race. It's the same in the field of memory, with the iMac packing a whopping 4GB while the MS210 struggles on half the amount. The sad story continues with hard drive space — while the cheapest iMac includes 500GB, HP's is maxed out at 320GB. Admittedly it's a decent 7,200rpm drive, but size is king.

The MS210 is starting to look decidedly like an All-in-One. It uses the ATI Radeon HD 3200 integrated chipset, versus NVIDIA's GeForce 9400M integrated graphics. Game, set and match to the iMac. The MS210's mediocre specs resulted in a rather limp result of 2,839 in PC Mark Vantage.

The final nail in the MS210's coffin is its price — it needs to be massively cheaper than an iMac to be worth a look. At \$1,199 it's not too expensive, but it's only \$400 less than the base iMac, which

starts at \$1,599. Considering it's less than half the PC of the iMac, that price difference just isn't big enough.

Bennett Ring





9  
10

# TI Deluxe 540

Is this finally Nehalem for the masses?

Trinity International  
www.ticomputers.com.au  
\$1,380

Powerful; great value; looks good  
with decent peripherals; quiet.

None.

**SPECIAL FEATURES**  
3.06GHz Core i3 540  
4GB of DDR3 RAM  
Gigabyte GA H55M-U02H



Intel's Nehalem processors truly kick butt. But because their only opposition comes from Intel's own Core 2 line, there hasn't ever been a reason for the company to lower its pricing. However, we finally have some affordable parts in the shape of Core i3 and the new H55 platform.

Trinity International built the Deluxe 540 especially for us and it's done a great job. The Cooler Master Sileo 500 case looks classy and is whisper quiet, thanks in part to soundproof cladding on the inside surfaces. The 22in BenQ G2220 LCD is bright and vibrant and even the lower-end

Logitech mouse and keyboard look and feel good.

Everything is based around a 3.06GHz Core i3 540 CPU. This 32nm dual-core part brings with it some new instructions and some minor architecture changes. Some are retrograde steps; like the removal of the memory controller from the CPU and the lack of Turbo Boost. However, HyperThreading is still there and integrated graphics are plunked next to the CPU for extra efficiency. The upshot is that Intel is finally competing in the sub-\$200 desktop processor market again.

Flanked by a 1TB Seagate hard disk and 4GB of DDR3 RAM, it scored 8,020 in PCMark Vantage, which is very respectable. This system will easily handle anything you throw at it and only hardcore encoders will be left twiddling their thumbs.

The new architecture brings with it a new motherboard chipset and TI uses Gigabyte's GA H55M-U02H. This naturally

has integrated graphics but TI adds a GTX 260 graphics card to allow decent game play. A score of 13,790 shows it will play all the latest games, albeit not all at the highest detail settings.

It's a winner for connectivity too. The graphics card supports HDMI and VGA. These connectors are mirrored on the motherboard's backplane, which isn't much use, however Display Port is also there should you need it. Also at the back of the system there is FireWire, eSATA, six USB ports, optical S/PDIF out and six audio jacks. Just note that this particular variant doesn't support the new, speedy USB 3.0. At the front of the case are the standard two USB ports, two audio jacks and eSATA.

There's plenty of room for upgrades with another graphics card slot plus two free memory slots available. The only other slot is regular PCI. You can easily add three more hard disks and there are four more 5.25 drive bays.

Windows 7 is included and TI will give you the option of both 32-bit and 64-bit varieties. In this day and age, 64-bit is the way to go — it's up and running now and is the only way to address more than 4GB of RAM in your system. Rounding things off is TI's 1-year parts and 5-year labour warranty.

At \$1,380 this is pretty much the best 'value PC' we've yet seen. You can spend thousands more on a Core i7 monster system but the law of diminishing returns kicks in. It's a great poster child for Core i3, and few people won't love the Deluxe 540.

Nick Ross

Pretty much  
the best 'value  
PC' we've ever  
seen.



**XGAMER FREE WINDOWS INSTALLATION!**



Built With Genuine  
Windows 7®  
Home Premium

Buy Microsoft Windows 7, Vista or XP with selected XGamer systems and We will install it for FREE!

**WWW.GAMEDUDE.COM.AU**

PH: 07 3387 1500 - ADDRESS: 3353 PACIFIC HWY, SPRINGWOOD, QLD, 4127

7  
10

## ASUS K52Jr

Designed for both work and play, can this master either?

### ASUS

www.asus.com.au  
\$1,099

- Excellent CPU, GPU and memory. ✓
- Case and screen feel a little flimsy. ✗

### SPECIAL FEATURES

Intel i3 350M  
4GB DDR3 memory  
500GB hard drive

Powering up this affordable desktop replacement, we were soon greeted by a whopping fifteen or so proprietary apps installed to the desktop. Whether it's the LifeFrame photo editing program or the ControlDeck control panel replacement, there's far too much preinstalled guff. ASUS needs to realise Windows does most of the same features (and better).

Wipe the hard drive though and we're left with quite a respectable performer. The new Core i3 350M processor delivers very responsive performance, with a clock speed of 2.27GHz. It's fantastic to see a very healthy 4GB of DDR3 included, giving Windows 7 plenty of room to stretch its wings. Even the GPU is better than expected; the ATI Mobility Radeon HD 5470 has enough grunt to run World of Warcraft at middling settings and will handle most of last year's titles with equally conservative options. Our review sample had 500GB of storage, providing plenty of room for all but the most obsessive file hoarder. These specs all combined to deliver an excellent PC Mark

Vantage result of 5,148.

Unfortunately the excellent hardware within isn't mirrored by an equally high-quality exterior. To put it bluntly, this feels like a thousand dollar notebook. It's overly plastic, with both the screen and keyboard exhibiting large amounts of flex. The screen is a large slab 15.6in diagonally across, but it's a pitifully low resolution, at just 1,366 x 768. This results in a rather grainy image.

And yet, despite the slightly flimsy exterior, this makes for a decent desktop replacement for those on a budget. If you're not taking it for a bush bash, the keyboard and case should hold up fine to the rigours of domestic life. And you'll be hard pressed to find a notebook with equal specs at this price.

Bennett Ring



9  
10

## HP Mini 210

While prices of netbooks plummet, quality continues to soar.

### HP

www.hp.com  
\$449

- Large keyboard; very light; excellent battery life. ✓
- The cheapest version has minimal storage space. ✗

### SPECIAL FEATURES

Intel Atom N450 CPU  
1GB DDR2 Memory  
10.1in WSVGA LED screen



Starting at \$449, the Mini 210 is one of HP's most affordable ranges of netbooks to hit Australia. Don't let the price fool you though — it's not built from balsa wood, or powered by a well-trained mouse in a treadmill. When you first unpack this netbook, it's hard to believe it's priced squarely at the budget end of the netbook bracket.

Windows 7 is surprisingly included at this price. Sure, it's the Starter version, which looks more like Vista than Windows 7, but it's still Windows. Not that you need ever see Windows, as the included QuickWeb software offers quick access to web browsing, Skype, email and basic media functionality, just a few seconds after powering up.

A standard Intel Atom N450 [1.66GHz] CPU does the thinking, while a 10.1in display offers plenty of screen real estate. Most impressive though is the so-called "island-style" keyboard, which is apparently

93% of the size of a full QWERTY keyboard. Sitting next to my Microsoft comfort curve keyboard it's more like 60% of the size, but there's no denying that this is one of the better netbook keyboards around. Unfortunately the touch pad isn't quite as wonderful, with some accuracy issues during our testing.

HP claims a battery life of nine hours for the Mini, but it didn't quite manage this day-breaking record under closer examination. During our video playback test, looping videos off the hard drive at full screen size, we managed to extract a very healthy six hours out of the Mini, so it should last slightly longer when relegated to basic

net surfing duties.

It might be priced towards the rock bottom of the market, but HP has endowed this netbook with high-end features. The Mini 210 redefines the affordable netbook experience.

Bennett Ring



7  
10

## Sapphire HD 5450 512MB GDDR3

Multiple monitors at a low price.

Sapphire   
www.sapphiretech.com   
\$79

Cheap; Eyefinity support.   
Only 2 digital connections; no gaming performance.

**SPECIAL FEATURES**   
Eyefinity support

Lately we've seen ATI release a new HD 5000 series product every few weeks, beginning with the high-end HD 5800 series, right down to the latest two; the HD 5400 and HD 5500.

The HD 5400 series are entry-level options for people who want a discrete graphics card that outperforms integrated graphics. The series allows multi-monitor support with Eyefinity on a budget.

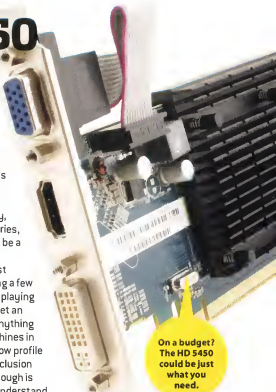
Sapphire — like the reference model — has opted for a passive cooler and low profile design. Included in the package is two LP brackets: one for the card and the other for the VGA port to attach to if you choose to keep it. The inclusion of VGA means that if you want to run Eyefinity one monitor is going to be analogue.

If you are using three monitors you will notice the VGA attached screen doesn't have the sharpness of the two

using the digital connection. While this won't be an issue for many it's worth noting. For many office environments this wouldn't be an issue, but if colours are important or all three monitors are text heavy, something in the HD 5600 series, while still being cheap, would be a better option.

Performance in games just doesn't exist. Outside of killing a few hours on Facebook games or playing Solitaire you're not going to get an experience that resembles anything close to good. The HD 5450 shines in its place in the market, with low profile and Eyefinity support. The inclusion of an analogue connection though is disappointing, although we understand it's due to the limitation that a low profile card brings.

Shane Baxtor



9  
10

## MSI HD 5770 HAWK

MSI enable Afterburners on HD 5770 HAWK.

MSI   
www.msicomputer.com   
\$249

Afterburner; TwinFrozrII cooler; OC ability.   
Very DIY to get most out of the card.

**SPECIAL FEATURES**   
Afterburner software  
TwinFrozrII

Last year MSI launched its Afterburner overclocking software. While not uncommon for a company to have its own, MSI stood out from the pack by giving us the ability to not only adjust clock speeds but also the core voltage.

Adding extra volts to the core will increase temperatures, so to combat this the HAWK carries with it the Twin FrozrII cooler, which we've seen on higher-end MSI models in the past.

In the gaming department you'll see a small jump in out-of-the-box performance thanks to an extra 25MHz on the core. With the Afterburner software installed and the core voltage bumped to 1.35V you'll quickly find yourself with some serious headroom. With the voltage up we achieved 1,045MHz on the core and 5,552MHz QDR on the 1GB of GDDR5, which is significantly up from the reference 850MHz/4800MHz QDR.

In Vantage we scored P12,835, which is up from a standard HD 5770,

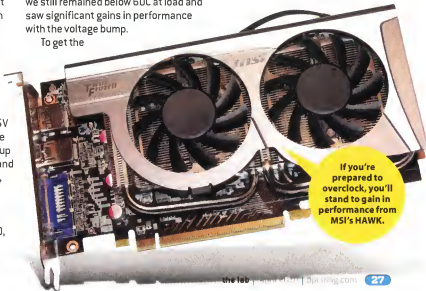
which gets P10,425. We also saw good gains in real-world environments with 20% increases not being uncommon in games like FarCry 2.

Due to the extra voltage we pumped through the card the core ran around 8C hotter than a standard HD 5770. But we still remained below 60C at load and saw significant gains in performance with the voltage bump.

To get the

most out of the model you need to be confident enough to overclock. If that's something that interests you this is a great little model, and using Afterburner is not only fun but extremely rewarding.

Shane Baxtor





## Corsair Dominator GTX

RAM enthusiasts have a tough decision to make.

**Corsair** ★  
www.corsair.com ★  
US\$200 per module ★

Extremely fast; a real enthusiast's product. ✓

Expensive; individual module purchase can be confusing. ✖

### SPECIAL FEATURES

★ GTX1 2,400MHz DDR  
★ GTX2 2,250MHz DDR



Expanding on its already strong Dominator GT series, Corsair has released the Dominator GTX to cater to the high-end market. The GTX1 kit carries a huge default clock of 2,400MHz DDR at 9-11-9-27-27. The other kit, labelled as GTX2, has a slightly lower default clock of 2,250MHz DDR with 8-8-8-24-27 timings making it much more aggressive.

When it came to the performance of the two kits our results were very different. With the GTX1's default clock speed being so high we could run our CPU at 4.26Hz. The GTX2s instead ran our CPU at 3.96Hz, which meant in all programs it was trailing.

Where the dynamics changed though was when it came to overclocking, the 2,400MHz kit gave us no headroom, while 2,350MHz was achieved with the GTX2s at the default timings. Pushing our CPU to just over 4.16Hz and the aggressive nature of the timings

meant performance was blistering and faster in RAM related tests than the 2,400MHz kit. This makes the decision on what kit to buy harder. Since you can't get a guarantee that the GTX2 will achieve 2,350MHz, if high MHz RAM is what you want the 2,400MHz GTX1 kit is the best option. If your priority is tight timings the GTX1 is going to be a better option; you can then hope you have the same overlocking luck as us.

Just know whatever kit you decide to buy, the bank account is going to get hit hard. It's also worth adding in the Corsair Airflow 2, which will give you back a little bit more money again.

Shane Baxtar



Decisions, decisions: what's your RAM priority?



## G.Skill PC3-17600 PI Series

G.Skill makes 2,200MHz affordable.

**G.Skill** ★  
www.gskill.com.tw ★  
\$299 ★

2,200MHz DDR; extremely fast; active cooling included. ✓

Expensive for 4GB; for advanced users; active cooling feels cheap. ✖

### SPECIAL FEATURES

★ 2,200MHz clock speed  
★ Active cooling



G.Skill continues to bring smiles to enthusiasts' faces with higher and higher memory speeds. Not only has it released a 4GB PC3-17600 2,200MHz kit under the PI series, it's also announced PC3-18400 and PC3-19200 kits that will carry clocks of 2,300MHz DDR and 2,400MHz DDR respectively.

While 2,200MHz sounds scary, getting to that clock speed isn't all that hard these days thanks to the range of multipliers on offer.

The PC3-17600 has active cooling and G.Skill has relaxed the timings to a 7-10-10-28-27 setup versus the 8-8-8-24-27 one seen in last month's A-DATA kit. Comparing the performance of the two kits, the G.Skill does lag slightly behind in synthetic tests because of its 7-10-10-28-27 setup. When it comes to real-world performance you'll see very little difference, which for most is more important.

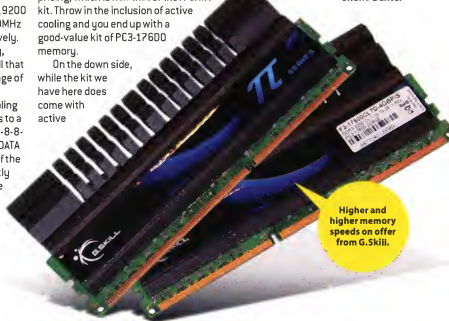
What's so amazing about the

G.Skill kit is that by relaxing the timings slightly — which has only a minor effect on performance — it's able to be significantly more aggressive with the pricing, which is half that of the A-DATA kit. Throw in the inclusion of active cooling and you end up with a good-value kit of PC3-17600 memory.

On the down side, while the kit we have here does come with active

cooling, the plastic design feels quite cheap. We wouldn't feel too confident if we had to install and remove the cooler too many times.

Shane Baxtar



Higher and higher memory speeds on offer from G.Skill.



**S**  
**10**

# HIS HD 5750 1GB iCooler IV

HIS welcomes HD 5750 into the iCooler series.

**HIS Digital** ★  
**www.hisdigital.com** Ⓢ  
**\$199** \$

Good cooling; value for money; mid-range performance. ✓

Stock clocks; one Dual-Link DVI. ✖

**SPECIAL FEATURES** i  
iCooler cooler



Budget-conscious gamers have never had it so good, with ATI releasing a strong line-up of mid-\$100 to \$200 cards that are capable of gaming at 1,680 x 1,050 and 1,920 x 1,200. If you're happy to spend more and want to overclock with an upgraded cooler, the HIS HD 5750, might be the card for you.

Choosing to stick with the default clocks of 700MHz on the core and 4,600MHz DDR on the 1GB of GDDR5 memory (while being boring) doesn't come as a surprise since we'll no doubt see a Turbo variation of the model in the future. The big deal about the iCooler series is the cooler, and while it doesn't look like anything fancy it manages to do a good job compared to the stock HD 5750 cooler, heat is down almost 2 degrees, while noise levels have dropped 3dB when at full load.

When it comes to gaming, performance is unchanged from the last HD 5750 we looked at. What this means is we're able to see good numbers at 1,680 x 1,050 with the detail set to high,

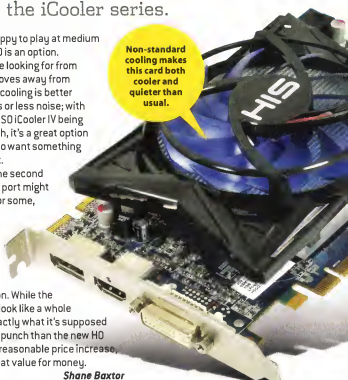
or if you're happy to play at medium 1,920 x 1,200 is an option.

What we're looking for from a card that moves away from the standard cooling is better temperatures or less noise; with the HIS HD 5750 iCooler IV being able to do both, it's a great option for people who want something a bit different.

Lacking the second Dual-Link DVI port might be an issue for some, though with DisplayPort and HDMI still present EyeFinity continues to be an option. While the card doesn't look like a whole lot it does exactly what it's supposed to. A bit more punch than the new HD 5670, with a reasonable price increase, gives you great value for money.

Shane Baxter

Non-standard cooling makes this card both cooler and quieter than usual.



**B**  
**10**

# WD My Book 3.0

Does this spell the end of FireWire?

**Western Digital** ★  
**www.wdc.com** Ⓢ  
**\$249** \$

Excellent performance; includes USB 3.0 PCI Express card. ✓

No SmartWare or hardware encryption. ✖

**SPECIAL FEATURES** i  
1TB of storage  
USB 3.0



With USB 3.0 on the cusp of widespread adoption, WD has released its first ever USB 3.0 drive. Don't worry if your PC doesn't have a USB 3.0 port yet, because WD has included a single-lane PCI Express USB 3.0 add-in card.

Installing the card (based on NEC's PD720200) is easy, though we recommend getting the latest drivers off the WD site rather than the outdated driver disc.

It's strange to see that WD's fastest external drive is missing the e-label capacity screen of its lesser brethren, especially considering just how fast USB 3.0 will allow you to fill this. Speaking of USB 3.0 — let's get to the fun bit. How fast does this bad boy perform?

With a maximum theoretical bandwidth of 5Gbit/s (640MB/s), USB 3.0 should offer phenomenal speeds. While real-world performance didn't come close to touching this due to the drive's mechanical limitations, the results were still nothing to sneeze at.

Using HDtach, we recorded a remarkable average read speed of 88MB/s. Writing was equally impressive, maxing out at 64MB/s.

These speeds are slightly faster than equivalent FireWire 800 drives, and only just short of eSATA equipped drives. For those of you accustomed to USB 2.0 drives, our performance results were nearly three times the speed of past USB 2.0 drives from WD.

Unfortunately, the My Book 3.0 is missing a couple of features that we've come to expect from WD drives. There's no hardware encryption for your top secret files, and WD's simple yet versatile SmartWare was also missing from our review sample. No doubt these will reappear in the next version.

If you're looking for the speediest method of external backups, USB 3.0 is the way to go, and WD's My Book 3.0 offers excellent support for this new connection type.

Bennett Ring

Whip through those all important backups with this USB 3.0 drive.





## Sapphire HD 5670 GDDR5

Budget-conscious users get a taste of HD 5000 series.

Sapphire  
www.sapphiretech.com  
\$149

EyeFinity support; GDDR5; good value; no extra power.

One Dual-Link DVI; many variations.

**SPECIAL FEATURES**  
1GB of GDDR5



Recently we've seen ATI release new top cards and work downwards. NVIDIA on the other hand started at the bottom and are working towards the top. A new month brings with it a new model and in this case it's a mid-range ATI offering, the HD 5670.

The model carries with it everything you would want from a mid-range card, 1GB of GDDR5, EyeFinity support and an Arctic Cooling heatsink fan setup. On the technical side of things we've got 400 Stream processors — this is down from the 720 found on the HD 5750, which is the next model up.

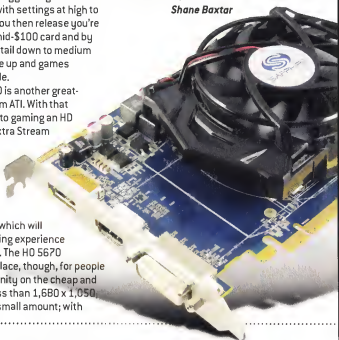
Apart from the Stream processors, many areas share similar numbers to the HD 5750: 128-bit memory bus and 16 ROPs. The core is up 75MHz, coming in at 775MHz, while the memory is down 150MHz at 1,000MHz or 4,000MHz QDR. The change that is really going to make the difference to the performance here when compared to the HD 5750 is the drop in Stream processors.

Looking at the numbers is a mixed bag: at first you feel disappointed that the card struggles in games at 1,680 x 1,050 with settings at high to very high, but you then realise you're dealing with a mid-\$100 card and by dropping the detail down to medium the numbers are up and games become playable.

The HD 5670 is another great-value model from ATI. With that said, if you're into gaming an HD 5750 with its extra Stream processors will handle 1,680 x 1,050 at higher detail or 1,920 x 1,200 at medium detail, which will make your gaming experience more enjoyable. The HD 5670 clearly has its place, though, for people who want EyeFinity on the cheap and who game at less than 1,680 x 1,050, or game only a small amount; with

many variations, including GDDR3 ones, just make sure you get the GDDR5 model.

Shane Baxter



## ASUS uBoom 2.1 Soundbar

Good sound, but totally useless for notebooks.

ASUS  
www.asus.com.au  
\$189

USB sound; auxiliary inputs for iPod; funky design.

Mediocre bass; no digital audio inputs; too big for notebooks.

**SPECIAL FEATURES**

All speakers in the one tube  
Angled satellites; great stereo field

The ASUS uBoom is a funky speaker tube designed for notebooks, although being 570mm long and weighing several kilos, it is not something you would want to cart around. In our opinion, something this size would be better placed under a monitor, so it may be more useful as a desktop speaker system.

If you have the room, the ASUS uBoom is quite impressive. Both satellite speakers (for mid-range and treble) and the "subwoofer" are housed in a brushed aluminium tube with black vents on top for the subwoofer, with a blue LED to indicate power.

Connecting the unit is a simple matter of plugging the power pack into the mains and connecting the uBoom to your computer via a USB cable. Since the uBoom is effectively a USB sound card, no additional drivers are required and it bypasses the sound card built into most notebooks.

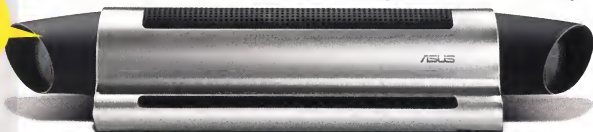
The satellite speakers are positioned at an angle at the ends of the tube, which gives an excellent stereo field that sounds considerably wider than the unit physically is. This would be great for gamers as the sounds appear to come from the sides of the monitor rather than being

cramped in the middle. Overall sound quality is better than most computer speakers, with well-defined treble and, to our ears, perhaps a little over-emphasised mid-range, which makes the sound a little unbalanced. Bass response is mediocre at comfortable listening levels, however if you are prepared to crank up the volume you will get the room to rattle.

The unit looks much better than most, and as they're integrated in the one tube you don't have wires running all over the place. In fact, the only things missing are digital audio inputs.

David Neiger

Not quite right for a notebook, but great for your desktop PC.



7  
10

## Belkin Double N+

Feature-rich Wi-Fi lightshow.

Belkin   
www.belkin.com.au   
\$280

Dual band Wi-Fi;  
Gigabit Ethernet.

Unsolved problems with  
UPnP AV server.

**SPECIAL FEATURES**   
BitTorrent client  
UPnP AV server

The Double N+ includes the usual features such as Dual 2.4GHz and 5GHz 802.11n Wi-Fi, four Gigabit Ethernet ports, firewall, DHCP, NAT, UPnP, WPS, remote management and so on.

Setup was uneventful, except for the usual bugbear of wireless being turned on by default but with no security. The setup assistant takes care of the basics, but if you've ever configured a router you'll find it just as easy to go straight to the web interface.

We're not big fans of blue LEDs, but at least they can be dimmed on this unit. Particularly useful are the lights showing any active Wi-Fi or Ethernet connections, and whether the router can reach the internet. When transient problems arise, the reconnect button may solve them by using the quietest Wi-Fi channel to reconnect with the modem. The ability to disable the Wi-Fi radios at a certain time of day is positioned as a 'green' feature but it also has some security value.

A USB port allows connection of a

storage device for use with the BitTorrent client, UPnP media server, or file server.

The shared storage feature worked well, but the UPnP AV server wouldn't talk to a Sony TV, Xbox 360 or XBMC, even though they all worked with another server on our network.

As for performance, the Double N+ proved slightly faster than the Netgear WNDR3700 at 2.4GHz, and at 5GHz delivered decent performance at the maximum range possible.

The automatic QoS feature seemed to work well but the graph that was supposed to show traffic in the four QoS categories refused to display. Belkin's first and second level technical support failed to come up with an answer, and the promised callback from a level three engineer did not materialise.

**Strong performance, with a few niggles.**

Stephen Withers



8  
10

## Netgear RangeMax

Keep in your data quota.

Netgear   
www.netgear.com.au   
\$299.00

Dual-band Wi-Fi;  
Gigabit Ethernet.

Relatively bulky.

**SPECIAL FEATURES**   
Traffic meter  
NAS and UPnP AV server

As we've come to expect from higher-end wireless routers, the WNDR3700 provides four Gigabit Ethernet ports along with dual-band 2.4GHz and 5GHz 802.11n Wi-Fi. Energy-saving features include automatic adjustment of the power level on the Ethernet ports, and the ability to vary the wireless transmitter power. A wizard built into the web interface makes setup simple. If you're worried about wireless security use the front-panel button to disable Wi-Fi until you're satisfied with the settings.

Wireless performance at 2.4GHz was respectable between diagonally opposite corners of the premises, with the signal passing through multiple walls, but the 5GHz side would not connect at all at that distance. The list of features is definitely on the comprehensive side, including UPnP, QoS, WPS, and port forwarding and triggering.

If you're of a mind to control people's internet access, the unit provides filtering by keyword or domain name,

and blocking by service (TCP/UDP/port range) — with provision for specifying 'trusted' IP addresses. Blocking can be limited to particular times and days.

Another welcome provision is a Guest network for visitors' use. This can be restricted to internet access only, preventing guests from digging around in your shared folders. And on that subject, the WNDR3700 will share a USB storage device that's plugged into it.

It's possible to create a list of authorised devices to stop other drives being shared. SMB is supported on the LAN side, and HTTP and FTP can be used locally or from the internet. The router also acts as a UPnP AV server and — unlike the Belkin Double N+ — this feature worked properly.

We also liked the traffic meter that can give you advance warning when you approach the quota. It would be even more useful with separate tallies of the usage of each connected device.

Stephen Withers



**Lots of features will attract many to Netgear's latest.**




9  
10

## HP Officejet 6000

A true colour laser alternative.

HP   
www.hp.com.au   
\$149 

Affordable networked small office printer. 

Minimal software. 

### SPECIAL FEATURES

Ethernet  
High print quality



With Ethernet and USB as standard, the Officejet 6000 is positioned as an alternative to laser printing for small offices. The software bundle is extremely limited, but installation and setup was a snap, including automatic detection of the networked printer.

The four-cartridge design minimises wastage. Replacement colour cartridges give a nominal 700 pages, but as black is said to be good for just 420 pages, the high-capacity (1,200 page) variant is worth considering.

The nominal print speed is 7ppm in black or colour (up to 32ppm claimed for draft mode). Our usual two-page test document printed in 48 seconds; the run-on speed for the second page was 15 seconds, equivalent to 4ppm. HP describes the output as "laser quality text" and it comes extremely close to living up to such a claim. In a side-by-side comparison, the Officejet's characters are slightly heavier, but even under a magnifying glass any difference in sharpness is

marginal. The black ink is particularly dense, which probably helps. For business graphics, the colours are appropriately bright. Despite the inclusion of Photosmart Essential, the Officejet 6000 isn't really positioned as a photo printer; there's just one tray and loading small sized paper is awkward. But our test shots came out well on HP Advanced Photo Paper.

HP claims the Officejet 6000 delivers 40 per cent less cost per page and energy use when compared with low-end colour lasers. Taking that at face value, it is certainly an affordable way of getting high-quality output for a small office with more than one computer, but the absence of a duplexer is probably a shortcoming for an office environment.

Stephen Withers



6  
10

## Fuji Xerox Phaser 3100MFP/S

Check the driver situation before you buy.

Fuji Xerox   
www.fujixeroxprinters.com   
\$339 

Relatively speedy personal printer. 

Minimal software; no fax function. 

### SPECIAL FEATURES

Standalone scan and print  
Prints Sudoku puzzles

The Phaser 3100MFP/S isn't a brand new model, but this personal monochrome laser multifunction device is relatively new to Australia. While it has a reasonably compact footprint, like most of its kind it is somewhat bulkier than you'd really want on your desk. Although drivers for Linux and Mac OS X are included, there are no Snow Leopard-compatible drivers. While Fuji Xerox says there is no support for Windows 7, the drivers provided seemed to work correctly.

For some reason, the software installer created a fax print queue even though the 3100MFP/S lacks that capability. Apart from the drivers and utility suite, all you get is Nuance's PaperPort SE 11 for Windows. While that's a decent program for making and managing scans, it lacks some desirable features such as OCR that are often included with MFDs. Print quality is fairly typical for the price range. The toner appears charcoal rather than

black, but on the other hand has a decidedly matte finish. The 3100MFP/S came close to meeting the nominal first-page-out time in our testing: 15 seconds vs the claimed 13. And it was spot on when it came to throughput: the second page of our test document emerged in another 3 seconds. A curious feature is the built-in ability to print Sudoku puzzles on demand.

Colour and mono scanning gave perfectly adequate results, and the 3100MFP/S also has a front USB connector for scanning to and printing from storage devices. A single-page copy can be made in 30 seconds, including warm-up from power-saving mode.

An extra \$60 buys the 3100MFP/X, which includes faxing and a 50-sheet document feeder. If you scan or copy many multi-page originals, the ADF alone may justify the additional cost.

Stephen Withers







## Sony Bloggie HD Webcam

Sony finally enters the mini HD camcorder category.

Sony  
www.sony.com.au  
\$299

Full HD image; rotating lens; face detection.

Could do with image stabilisation.

### SPECIAL FEATURES

1,920 x 1080 resolution  
5MP stills  
360-degree shooting  
SD card slot



As seen in our labs roundup in the December issue of APC, mini HD camcorders have become a new and cheap option for the average consumer to capture decent-quality video at a low price. Granted, they do not offer the image quality of a full-sized HD camcorder, but at less than \$300, you certainly do get a lot of bang for your buck.

Sony has entered the market in Australia with the Bloggie Webcam, and it's one of the first on the market to offer true 1,920 x 1080 image resolution in this format. Like other mini HD camcorders, the Bloggie has a small form factor with minimal controls. What sets it apart from the competition is the lens' ability to rotate vertically up to 270 degrees, allowing users to shoot what's in front, behind or even above them. The addition of a

lens attachment offers a novel way of shooting 360 degree video, which can be viewed as one extra-wide (and distorted) panoramic, or it can be viewed in smaller scenes.

Image quality is slightly better than that of the JVC PICSID, mainly due to the Bloggie's use of face detection technology that seems to allow for quicker focusing and better exposures. Sadly, the 4x zoom, like in other mini HD camcorders, is pretty weak and of not much use.

The Bloggie has an SD/SDHC card slot for expandable memory and comes with a 4GB Memory Stick, which

will hold up to 2 hours of HD video. If you're after something cheap that will record decent video for home use while also taking passable 5MP still photos, then the Bloggie is a product well worth considering. Although, if you're after the best quality for your home movies, then a full-size camcorder might be the best option.

Christopher Zammit



## Canon EOS 550D

Bigger, better and brighter than its predecessor.

Canon  
www.canon.com.au  
From \$1,349 (body only)

Great images; beautiful screen; quality build.

None.

### SPECIAL FEATURES

3in LCD  
18 megapixels  
6400 ISO  
Full HD movies  
LiveView



Canon's latest entry-level DSLR is a vast improvement on its predecessors, the 450D and 500D. An improvement in image quality, a larger (and clearer) LCD screen as well as a boost in megapixels make it an appealing piece of kit.

The first thing we noticed on picking up the 550D is that it is about the same size as the 500D, despite the massive 3in LCD display on its rear. The screen is an impressive improvement that is not only brighter but also a lot clearer than anything we've seen before. Users now have the ability to preview a stored image at full magnification and still see a sharp picture with no pixelation. This is a quiet feat considering that the 550D now has a DIGIC 4 sensor with 18 megapixels, which allows for much larger prints.

The ISO has also had a boost with a maximum of 6400 and up to 12800 extended. This allows for more natural-looking shots in low light and

less dependence on the built-in fill flash.

The HD video mode is also improved due to the introduction of the 'Movie Crop' mode, which allows users to crop and magnify the centre of a HD image to the equivalent of 7x zoom. This is a digital process, so your video in this mode will drop back from high to standard definition, although it is useful for getting a lot closer to your subjects.

9-point autofocus and a fast shooting speed of 3.7 frames per second should keep all but the

pros happy. LiveView shooting via the LCD screen is a simple process that is a pleasure to use. In full auto, the 550D does all the work for you and can produce some great images with rich colours and fine detail.

Christopher Zammit

Up and away: Canon's latest entry-level impresses on many fronts.



8  
10

## Pioneer BDR-205

The world's fastest Blu-ray burner.

**Pioneer Australia** ★  
**www.pioneer.com.au** ◎  
**\$369** \$

Fastest Blu-ray burner; supports all CD, DVD and Blu-ray formats. ✓

Lack of 12x Blu-ray media; high cost of media. ✗

**SPECIAL FEATURES** i  
PowerDVD suite  
BD-R and BD-RE support



From the outside this unit looks like any other Blu-ray/DVD burner, with a SATA interface on the back (and cables included in the box). Installing the unit was fairly straightforward, as it simply slots into any free 5.25in drive bay and connects to the SATA controller. Vista and Windows 7 immediately detected the drive, and after loading the supplied PowerDVD suite we were ready to burn.

Unfortunately, despite ringing around to various suppliers, we were only able to source Verbatim 4x BD-R and 2x BD-RE media for our tests. The unit performed well but obviously we couldn't run it at full speed. Perhaps by the time you read this 12x media may be available, although if the price of 4x media is anything to go by, it will not be cheap.

As well as burning both BD-R and BD-RE disks, the unit supports all current DVD formats including DVD±R/RW and DL media at a write speed of 16x for single layer ±R media and 8x for other dual layer and rewritable media. DVD-RAM is also supported at 5x read and write speeds.

The supplied software is easy to use, although only the older DVD Suite 7 is provided rather than the current version 8. It is adequate for backing up

large amounts of data for archives and does allow you to burn high-definition movies from your camcorder, although if you are serious about Blu-ray creation you would be better off with another package.

In terms of features, this drive is the one to get, although you may be waiting a while before you can take full advantage of its performance.

David Nelger



9  
10

## DViCO TViX M6600-N

One of the most powerful media servers on the market.

**DViCO** ★  
**www.dvico.com** ◎  
**\$699** \$

Everything just works. ✓

Interface could be prettier. ✗

**SPECIAL FEATURES** i  
1TB of storage  
Dual HDTV tuners  
Supports H.264 codec  
(Profile 4.1), MKV and RMVB



It might not look like much, but the TViX M6600-N offers the functionality of several devices. Best of all, DViCO hasn't scrimped on any one feature, with each capability of the M6600-N offering excellent performance.

It's one of the only PVRs on the market to support 1080p playback and recording, outputted via HDMI 1.3a. It's missing component output, but we're happy to see this ageing connection go the way of the dodo. Dolby Optical out is included, for those with older AV receivers. A single hard drive offers a terabyte of recording space, and replacing this with larger drives couldn't be easier. EPG functionality is clean if simplistic. Skipping adverts is easy, as this isn't a Freeview-compliant device.

It also offers a robust media player experience, supporting all of the latest formats such as DivX (including 1080p MKV files), and DVD backups in both ISO and

VIDEO TS formats. These can be streamed from your PC via Ethernet or 802.11n, though we recommend a wired connection for high-res files. Obviously images and audio files are also able to be played, and it's nice to see the inclusion of FLAC support.

Finally, DViCO offers what it calls IMS, standing for Internet Media Services. Provided you're connected to the net, it allows the user to use YouTube, Picasa, RSS News Feeds and the Weather Channel. Nice to

have, but probably not terribly useful for the majority of APC users.

The beauty of this device is that everything works and works well. We had no problems setting up the box, and every file type we played back worked perfectly. Considering the excellent hardware configuration, the price is a bargain. A must for any serious movie and music loving geek.

Bennett Ring



9  
10

# Panasonic TH-P54Z1A plasma

The new king of the plasmas.

Panasonic  
www.panasonic.com.au  
\$5,999

Looks stunning; fantastic HD performance; wireless; great value. Less comfortable with SD TV; not ideal for bright rooms.

## SPECIAL FEATURES

- 54in screen
- 1in thick
- Full 1080p/24 wirelessly



Sony blew us away with its wireless, super-thin, ZX-series LCD TV last year, but it was excessively priced, small and performance was mediocre. Around the same time Panasonic showed us its planned super-thin plasma but only now has it come to market. Out of the box, it's stunning. At barely one inch thick all over, it's crazy thin for any TV — let alone a plasma. It's only available in a 54in model and weighs 32kg (with speakers and no pedestal) which might seem like a lot, but it's some 20kg lighter than other similar-sized plasmas.

In addition to the thinness is

It's official: this is our favourite TV, and it should last you until 2012.



the wireless ability, which transmits a Full HD picture across a room using a 60GHz signal (this requires line of sight). However, while the Sony couldn't manage beyond 1080i, this supports full 1080p/24 wirelessly. It doesn't matter if someone walks through the beam thanks to what Panasonic calls 'Beam Steering Technology' but standing directly in front of it is another matter.

The best news is that picture quality is as good as its external looks — which are indeed classy thanks to silver and black trim and matching speakers on the sides. Sport in HD looked fabulous. Colours were bright and vibrant, detail superb and contrast was excellent with true blacks. Motion smoothing was very good too although its 600Hz subfield drive can't quite match LCD's 2000Hz performance for absolute fluidity. Movies looked far better than on LCD. The great contrast was noticeable thanks to the superior blacks and the motion smoothing didn't ruin the look of films, which 200Hz LCDs are prone to do.

Plasmas inherently have issues with 'plasma fizz' which, up close, looks like the pixels are fizzing. This is comparatively minor on the Z1

and is barely noticeable from a couple of metres away. People with bright rooms may find the picture a bit dark though.

Regular HD TV was a joy to watch. Upscaled SD performance wasn't too bad either, but be prepared for some fuzziness and jaggies around fine-detailed areas plus image aberrations in panning shots. Low-quality broadcasts will always look bad on screens this size, but while Sony may still be king of upscaling, it doesn't make screens this big, and we'd happily watch this ad in infinitum.

Elsewhere, gamers needn't fear for lag as it waltzed through our Guitar Hero tests. The twin, detachable, 10W speakers got loud and punchy. Connectivity is good thanks to the transmitter unit's four HDMI inputs, two component, three composite, S-Video and optical S/PDIF jacks. The transmitter also sports an SD slot for direct playback of slideshows and AVCHD movies. The remote is responsive and intuitive and the TV Guide is simple to access and read.

All in all this is our favourite TV and \$5,999 is a fair price for it. Sony's ZX LCD is now \$1,000 less but 14 inches smaller and Samsung's thin LED LCDs and thin-plasmas don't offer as good picture quality. Panasonic's V-series received our Editor's Choice Award last month, but if you want thin and wireless then this is for you.

Nick Ross

## 80Mbps Network Link

Preconfigured- just 'Point-n-Play'

- Built-in electronics
- 20m power/ethernet cable
- Wireless-N

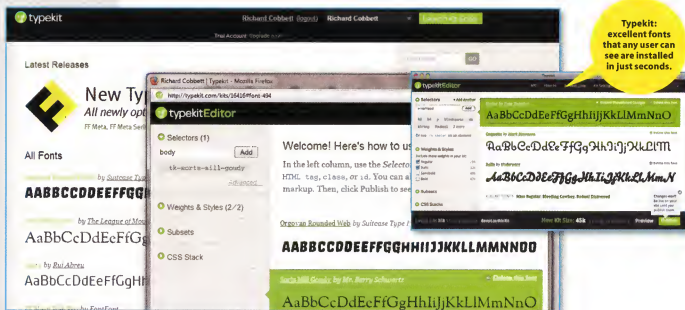
Just  
\$868/pair

Dealer inquiries welcome

www.freenet-antennas.com/bridge-n

FreeNet Antennas





Typekit:  
excellent fonts  
that any user can  
see are installed  
in just seconds.



# Typekit

Bored with your site's typography?

**Typekit**   
**www.typekit.com**   
**Free to US\$250/year**

Falls back to using regular web fonts on unsupported systems.

Continual paid reliance on Typekit server.

**SPECIAL FEATURES**   
JavaScript font tool  
Multiple libraries  
Easy archive searching



Fonts are one of the web's biggest weaknesses. That's not because it's impossible to break out of the standard mix of Times New Roman, Verdana, Trebuchet and so on, but because attempting to do so is maddeningly inconsistent. You can specify any font you like on a web site, but if the user doesn't have it on their system, it's not going to look right. As a result, designers have always had to stick with either the safe-bet fonts that everyone has or throw in extra technology, such as the Flash headline-rendering SIFR or scraps of PHP that render text out as static image files, to make things work.

However, we're finally seeing some change. CSS enables an attribute called `@font-face`, which lets you point a web browser to a standard TrueType font online and use it as though it was installed on the user's own machine. All the major browsers now support this, although it's only recently that anyone's been in a position to use it. The only real downside is that font licensing is a hellishly complicated business. In this context, are you merely using the font when it's used to display, or are you distributing it to everyone who visits your web site? There are free fonts out there, but the

professional ones cost money, and getting caught using one without the proper licences wouldn't be much fun.

Typekit acts as your online font archive, with no strings attached. It offers several packages, from a freebie that lets you use two fonts on a site in exchange for a little icon through to unlimited access to the whole collection for US\$250 a year. At the moment, the various yearly plans are flagged as 'Act now' and are reasonably priced — we can see bloggers paying US\$25 a year to jazz up a site, but US\$7 a month is another story. Each comes with a 30-day trial, so you can play with the available fonts as much as you like.

The service plugs into your existing design via a couple of lines of JavaScript, so no redesigning is required. If a user's browser doesn't support the `@font-face` implementation that Typekit uses, they get the standard CSS and never need know they're missing out. An annoyance with `@font-face` rather than Typekit itself is that fonts can be large files, which can result in the site appearing without its new look, then 'snapping' to the prettier version. It's much more noticeable if you've done something dramatic to lots of copy.

The only major downside is that by using Typekit, you're making your site reliant on an external service for core functionality: paying a recurring subscription and relying on it not to go down. On the other hand, at least it'll still look fine if anything goes wrong. Redesigning your site on the fly is incredibly easy. Typekit offers a simple interface that makes adding a new font as easy as clicking on the one that you like.

The fonts Typekit offers are an interesting mix with the focus firmly on professional and readable type. All of them are sorted by tags, from the obvious serif and sans serif down to sci-fi and grunge, with plenty of specimens and a type tester. If you pick one that doesn't look good, just remove it and try another — no charge.

Typekit is an extremely well thought out and easy to integrate solution to one of the web's most persistent design problems. If you're able to self-host your own fonts, you don't need it, but it certainly makes a very fiddly process much cheaper and easier. It's the perfect way to make text stand out, and great for adding punch to headers without breaking away from the purity of raw text.



Richard Cobbett

7  
10

# Quicken Personal Plus 2010

Keep your dollars under control.

Reckon   
www.quicken.com.au   
\$199 

Comprehensive personal finance tools.   
Intrusive protection scheme. 

**SPECIAL FEATURES**   
Tax planning  
Portfolio tracking  
Rental analysis

Quicken Personal Plus is a good way of keeping your financial affairs in order, providing they're sufficiently complex. By keeping track of your income, expenditure, savings and investments, it can tell you where you stand and where you're heading. In addition to the everyday ins and outs, the software makes it easy to track the performance of a share portfolio, with one-click downloading of current and historical price information. If real estate is your thing, Quicken Personal Plus now includes integration with Reckon's Elite Rental for gearing analysis, and a restricted version of that program is included. However, we were unable to get it to pick up all the relevant data from Quicken, even with Reckon's help.

The way categories auto-complete

helps to minimise typing: "T" expands to "Telephone", and then you can use the down-arrow key to select fixed or mobile (assuming you want that level of categorisation). But the more mouse-centric user might be disappointed to discover that scrolling lists do not respond appropriately to the wheel.

Quicken tries to reduce the workload associated with processing regular events such as monthly bills and your pay cheque. If you set up a recurring event, the program prompts you at the appropriate time, and you only need to make any adjustments rather than entering all the details. Very sensible.

But one of Quicken's functions is calculating your expected tax liability, which requires a record of PAYG deductions, and curiously there's no predefined account for them. Reckon suggests creating a category called "Tax", marking it as "Tax related", and then associating it with "Question 1 & Question 3: Tax instalments deducted".

Another wrinkle is that you have to explicitly tell the Tax Planner to bring in the data from

Quicken — where else is it going to come from?

If you're trying to eliminate as much paper as possible from your home or office, Quicken can attach a scanned image of an invoice or other document with the transaction record. This is a good way of managing electronically delivered invoices etc, as it handles HTML files as well as PDF and other image formats.

The Quicken desktop widget is a useful accessory, as it shows if there are any upcoming transactions, overdue bills or cheques to print without having to open the program.

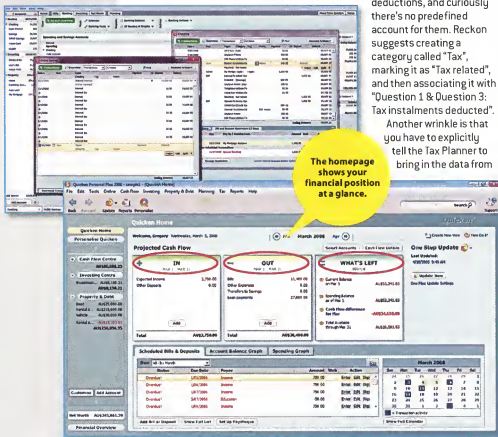
You're forced to activate and register the program, and you may be charged extra if you need to reinstall (eg. after a hard disk failure). A shortcoming of Reckon's protection scheme showed up when — a few days after installation — Quicken decided it was no longer on the original computer, and refused to run. Reckon's advice was to re-enter the original licence key, and fortunately that did the trick.

You really won't want to call the tech support line if you can help it, as you'll be slugged \$4.90 per minute, yet we can't remember the last time we had to ask a vendor so many questions in the course of a review.

Before you buy this type of product, you really need to ask yourself what you expect to get out of it. Back in the day, your reviewer used Quicken to keep track of where his money was coming from and going to — but eventually he realised it was wasting a couple of hours a month that would never be recovered — his financial situation was just too simple.

If your affairs are more complex, or if your cashflow is finely balanced, or if you are concerned about keeping the maximum amount of cash in interest-bearing accounts for as long as possible, Quicken's facilities will come into their own. For those who don't need the investing, planning or tax features, Quicken Personal is \$79.

Stephen Withers





# Best apps

There's an app for pretty much anything you want to do. Here we take a look at our favourite ones.

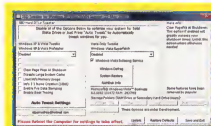


## WSUS Offline Update

A ripper of a DVD burner... and it's free!

Even though we're in the age of the internet, it does not follow that every Windows PC or server is connected to the net. It makes updating Windows and Microsoft Office on these machines a complete pain since they're not getting the Windows Update service. Some German developers have created free software, WSUS Offline Update, which lets you run Windows Update on any Windows PC without a connection. The software covers Windows OSs back to XP and Server 2003, as well as versions of Office back to Office XP. With it, you download updates for Windows or Office on an internet-connected computer, generate an ISO [disc] image and burn it to DVD, then run the updates on the unconnected computers.

**Free** - WSUS Offline - > [www.wsusoffline.net](http://www.wsusoffline.net)



## Tweak for SSD drives

Early adopters of first-generation SSDs found out the hard way that while the drives performed spectacularly at first, they would eventually slow because they needed to do a full block-level erase and rewrite every time they wrote to disk. The Windows TRIM command supported by most second-generation SSDs fixed this along with the Wiper.exe software, but there was nothing for first-generation users until SSD Tweak. This free program works by reducing the number of write functions on the drive, ranging from the Windows Indexing service to Superfetch, and the user can tweak the settings to suit.

**Free** - SSD Tweak - > [tinyurl.com/yetvun9](http://tinyurl.com/yetvun9)

## BlackBerry Enterprise Server Express

Until now, small businesses that have considered adding the BlackBerry as a new staff communication tool have been put off by the costs of RIM's Enterprise BlackBerry Server, which comes with heaps of corporate functionality not needed by smaller businesses. It's now become easier for SMBs to add the BlackBerry service or to connect the personal BlackBerries of employees to work email as RIM has now announced BlackBerry Server Express.

It's software that will wirelessly synchronise BlackBerry smartphones with Microsoft Exchange or Microsoft Windows Small Business Server software.



**Free** - BlackBerry - > [tinyurl.com/yfbarjz](http://tinyurl.com/yfbarjz)



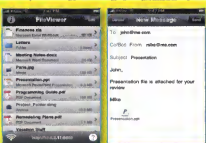
## What's my computer doing?

This is a simple utility that monitors what programs and processes are accessing your hard drive and using system resources, so you have a snapshot of what's going on with your machine. It also provides information on the programs, such as when it was installed, its folder and whether there are any known issues with it. It also lets you terminate the program, or check it for malware by sending it to Kaspersky. In essence, this utility does nothing that you can't do with Task Manager, but it's easier to call up when you suddenly get that annoying slowdown.

**Free** - Easy2Sync - > [tinyurl.com/yccj571](http://tinyurl.com/yccj571)

# App Store

**Peter Dockrill** scours the App Store and reviews the best apps available for the iPhone and iPod touch.



## FileViewer

One of the most surprising things about the iPhone (and a real limitation, unfortunately) is how 'locked down' the whole thing is: the device feels more a collection of disconnected apps and functionalities rather than an integrated computer. And this is where third-party apps come to the rescue to fill in the gaps. For example, the iPhone isn't natively visible to PCs as a generic data transfer/storage drive — FileViewer is one of the apps that can rectify that (via Wi-Fi) and works with Win/Mac/Linux.

Free • Mitchell Cohen > <http://tinyurl.com/y2r4q>

## FF: The Warlock of Firetop Mountain

If you're a male and spent a portion of your youth in the 1980s, there's a good chance you remember the *Fighting Fantasy* (FF) gamebooks. A cross between the more kid-focused Choose Your Own Adventure series and a tabletop RPG, *Fighting Fantasy* provided an interactive fictional experience for a whole generation pre-MMOs, Harry Potter and Pokemon. Now, the first of some 60-something titles has been lovingly ported to the iPhone — no pencil or dice required.



\$3.99 • Big Blue Bubble > [www.bigbluebubble.com](http://www.bigbluebubble.com)



## Bebot — Robot Synth

Part-toy, part-cartoon and part-synthesizer, Bebot epitomises the one-of-a-kind charm, creativity and randomness you can find all over the App Store. At heart, it's a live synth tool. It supports four-finger multi-touch, a number of different pre-set voices, synth modes, auto-tune features, heaps of configurability — and that cute little animated robot to boot, who sings as you play. It's not what you'd call a 'serious' music creation app, but there's a lot of power in this and it'll bring a smile to your face.

\$2.49 • Normalware > [www.normalware.com](http://www.normalware.com)

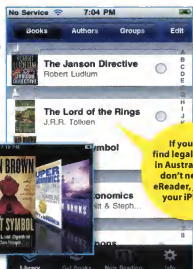
# Stanza

Who needs a dedicated eBook reader when you have an iPhone?

The arrival of the iPad and its eminent suitability to eBooks (and eReading generally) has put the spotlight squarely back on the Kindle — will the reigning eReader survive the now markedly increased competition from Apple's device? You'd think so — if only for the Kindle's unique paper-like display and low power consumption (not to mention its established user base). But the thing is, you don't need a dedicated Kindle or an iPad to get into eBooks, any iPhone or iPod touch is sufficient. Stanza is a free program that displays electronic books on your iDevice, and in a multitude of formats (.pdb, .epub, .azw, .pdf, .doc etc.). The interface is nice and intuitive: tap right-screen to turn the page, left to turn back, middle for options, and sliding

vertically customises brightness. Plus, you can choose font size (and font), bookmark whatever you like, source books directly online (or transfer from your PC), search within the text and lots more. Of course, the problem in Australia is finding commercial eBooks legally, due to copyright restrictions. One place you can try is Dymocks, which has been the biggest Australian supporter of the format hitherto. Also, there's a huge variety of free, out-of-copyright titles available (ie. Austen, Dickens etc. — any of the 'ye olde classics').

Free • Lexcycle > [www.lexcycle.com](http://www.lexcycle.com)

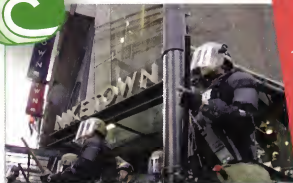


- 
- 41** BitTorrent heaven
  - 42** Using BitTorrent
  - 44** Fine-tuning BitTorrent
  - 46** TV catchup sites
  - 48** Free general streaming sites
  - 48** Free libraries
  - 50** How to play back videos on the Xbox 360
  - 52** How to play back videos on the PlayStation 3
  - 54** How to play back videos on your PC
  - 56** Windows Media Center
  - 62** NAS & home servers

# DOWNLOAD SECRETS

The internet is full of videos. You just need the right knowledge, tools and addresses to find them.

When you hear the word BitTorrent, chances are you'll think illegal downloads, pirates, court action. It's a pity, because while BitTorrents, video downloaders and proxy services have become the tools of content pirates, they are also the very same tools you use to find and download legal content safely. In fact, they are the tools that make you a 21st century media consumer, who is able to find any number of high-quality videos and other multimedia files on the net and play them on home theatre systems. In this guide, we'll use the tools used by download pirates to find, download and then view some of the best free content on the web.



# BitTorrent heaven!

It's not all porn and illegal downloads.

The most spectacularly effective way of finding movies, music and other multimedia files on the internet is to use BitTorrent.

Yes, this protocol is widely used for illegal downloads — but the arrival of affordable high-definition cameras means that there is more high-quality, free legal content available.

BitTorrent is also used to distribute public domain software and movie trailers as well as open source (GNU) movies and Linux distros.

Let's say you want to download a copy of *The Corporation*, a movie made available as a legal torrent by its makers. To use the BitTorrent system, you will need:

**1** A broadband internet connection with a high data transfer quota, as a single movie can be several hundred MB in size (even more if high definition).

**2** Software that allows you to download files (a BitTorrent client), such as uTorrent or Vuze.

**3** A torrent site. These are sites that maintain indexes of torrents. Torrents are small files which track which users' computers have the files you want. So torrent sites don't have any content; they just point to the computers that have it. When you download a file using BitTorrent, it's being gathered bit by bit from several peers and reassembled on your computer.

With the tougher campaigns from anti-piracy bodies, some of the sites that used to provide illegal content are now offering legal videos for download.

One of them is Mininova, which offers legal content from users who want a global distribution network for their movies and music. Using Mininova is a fantastic way to learn how BitTorrent works, because until a few months ago, it was one of biggest pirates sites. Everything still works the same, but the content is now legal.

Many other torrent site still point to copyrighted material, but bear in mind that these dubious sites are not the safest places to be on the internet, as they may contain malicious code that can inject spyware or Trojans into your system. Whilst good antivirus software may offer some protection, the best defence is to only obtain your torrents from legal sources and legitimate torrent lists.

## HOW IT WORKS

The BitTorrent system works well with very large files, because it breaks them up into small chunks and distributes the load of transferring files amongst peers. This means that popular files that are spread out amongst many peers will transfer quickly because each peer sends their parts of the file simultaneously. You also contribute by distributing parts of the file you have to other peers, which means you may upload even more than you download. If you are metered for both uploads and downloads this could use up your quota very quickly.

## LEGAL BIT TORRENT SITES

- 1 MININOVA.ORG
- 2 LEGALTORRENTS.COM
- 3 PUBLICDOMAINTORRENTS.COM
- 4 LEGITTORRENTS.INFO
- 5 YOUTORRENT.COM
- 6 ETREE.ORG

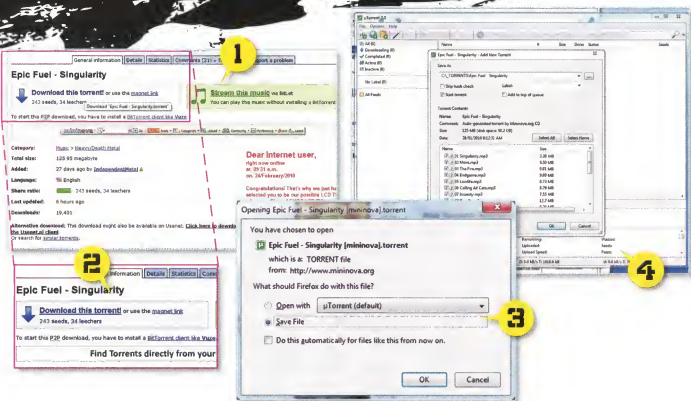
## LEGAL SITUATION

Many people use BitTorrent to download copyright movies and TV shows — and this is definitely not legal. If you are caught downloading movies and other copyright material and charges are laid, it will cost you many thousands of dollars in legal fees (before you go to court). If you are found guilty you risk tens of thousands of dollars in fines as well as a possible jail sentence. If the copyright owner then decides to sue you, there could be even more legal fees and damages awarded against you. This is definitely 'lose your house' type legal action!

That being said, many people still take the risk and as a result you can find incredible amounts of copyright material such as new release movies, television shows (including many that haven't screened in Australia yet), bootleg concerts, music and illegal versions of popular software for PC and game consoles.

Also remember that copyright holders can monitor these sites to obtain the IP addresses of people conducting searches and could use this evidence to launch legal action against illegal file sharers. Whilst we understand ISPs are not obliged to disclose who is logged onto a specific IP address, the law in this area may change.





# Using BitTorrent

Using a torrent site is straightforward.

**1** Simply go to a torrent search engine (such as [www.mininova.org](http://www.mininova.org)) which hosts content distribution services and enter the content you are searching for in the search bar.

**2** If the content is available you will be prompted to download the torrent file (the traditional approach) or using some of the new trackerless technologies such as Magnet, DHT or PEX, which use peer to peer technology to locate other peers rather than relying on a central tracker server.

**3** The torrent file should automatically open in pTorrent and the software will attempt to locate the tracker or peers and commence downloading the file. Be patient as it can take several hours or even days to download large files, particularly if there are only a few peers with the file.

Whilst files from content distribution

## UTORRENT

One of the best BitTorrent clients is **µTorrent** which is completely free (no adware or spyware) and can be downloaded from [www.utorrent.com](http://www.utorrent.com) or **APC DVD**. A beta version is available for Mac users. We like **µTorrent** because it is small (311KB) and doesn't consume vast amounts of system resources. It even runs happily on a netbook! The only thing to be aware of is that by default it will install the Ask toolbar unless you intentionally uncheck the appropriate boxes during install.

services should be safe, it is a good idea nevertheless to check the file with antivirus and antispyware software to make sure it hasn't been tampered with or you haven't inadvertently downloaded a Trojan with a similar name. Avoid illegal content as that is at

greater risk of carrying a nasty payload of spyware or a virus.

**4** Once downloaded you will need a compatible media player in order to be able to watch the movies. One of the better players available is **VLC**, which is open source, free and supports just about every codec [video file format] out there. You can download the latest Windows, Linux or Mac version of **VLC** from [www.videolan.org](http://www.videolan.org).

**5** Connect up your big screen TV to your secondary video output, configure **VLC** to use the secondary output for display and break out the popcorn. Hopefully everything will work properly, although we have experienced some issues with **VLC** using certain video cards and displays. Thankfully the **VLC** forums are an excellent source of information if you need help sorting out playback issues.



# Win a Digital Home Makeover.

**\$50,000 prize pool up for grabs!**



## It's easy to enter!

Purchase any D-Link product(s) over the value of \$150.00 from any Australian or NZ Retailer on the same invoice and visit [www.dlink.com.au/digitalmakeover](http://www.dlink.com.au/digitalmakeover) (conditions apply visit website)

**Does your home need a digital makeover? We have a \$50,000 prize pool available.**

Each month D-Link will select 2 lucky entries (1 in Australia and 1 in NZ) based on your answer to the question, "Why do you think your home needs a digital makeover?"

Prizes would include LCD Digital TV, Home Theatre Surround Speakers, Notebooks, Media Streamers, Wireless Routers, IP Cameras and much more. ALSO someone from D-Link will come out and get your network running **ALL FOR FREE...**

**Hurry before offer ends July 2010!** (Valid for purchases made from 1 Feb 2010 to 31 Jul 2010)

**Create your own digital space.**

[www.dlink.com.au](http://www.dlink.com.au) | [www.dlink.co.nz](http://www.dlink.co.nz)

**D-Link®**  
Building Networks for People

Torrents with the most seeders and least leechers will download the fastest.

✓	28 days ago	699 Mb	1,319	477
✓	29 days ago	699 Mb	9,870	3,410
✓	1 month ago	715 Mb	2,648	1,397
✓	2 months ago	713 Mb	320	163
✓	2 months ago	1593 Mb	798	607
✓	2 months ago	1661 Mb	490	442
✓	2 months ago	714 Mb	3,092	2,062
✓	2 months ago	715 Mb	354	158
✓	2 months ago	233 Mb	91	19
✓	3 months ago	170 Mb	495	42

HEALTH	SIZE	FILES	DATE	SEED	LEECH
	701.67 MB	4	22 hours ago	4740	8878
	1.37 GB	1	4 days ago	2144	5216
	699.16 MB	2	5 days ago	7779	5761
	1.36 GB				
	1.37 GB				
				33	125.95 MB
				13	138.54 MB

st album Singularity out they load this awesome album!

one includes their early hits and released - synthetically organic

# Secret tips for faster torrents

BitTorrent files can range from a few hundred megabytes to dozens of gigabytes each, so maximising your download speed is critical.



You've gone to a legal BitTorrent site, searched for a torrent and got a search result showing several examples of the same torrent. At this point, you want to pick the one that will download the fastest, so the first thing to look at is the information alongside the torrent, which may show the size, number and upload date of the files in the torrent, and the number of seeders and leechers. The last two are the most important. The seeders are users who have a complete copy of the file for others to download and the leechers are users who are currently downloading it and have portions of it for others to download as well [in the BitTorrent protocol, once you start downloading bits of a file, other users — known as peers — can start downloading those bits from you!].

The theory (and genius) of BitTorrent holds that the more popular the file, the faster it will download. Why? Because with more people downloading it, each file also has more people (peers) uploading it. But more important than total number of seeders and leechers [known as the swarm] is the ratio of seeders to

leechers. Torrents with the most seeders and least leechers will download the fastest — primarily because seeders have their entire bandwidth devoted to uploading the files, whereas leechers are both uploading and downloading. So in theory, a torrent whose swarm contains 20% seeders and 80% leechers will download slower than one in which there are 40% seeders and 60% leechers.

## IDEAL NUMBER OF TORRENT DOWNLOADS

It's tempting to open up dozens of torrent downloads in a torrent client and leave them downloading for the next few hours. But too many torrents means all open connections and requests will max out your bandwidth and not be serviced properly. The ideal number of concurrent downloads depends on your speed. Clients such as uTorrent feature a speed test which recommends the ideal number, but there are also a number of BitTorrent calculators that will work out the ideal number of simultaneous downloads you should make for your speed.

A popular one is at <http://infinite-source.de/az/az-calc.html>.

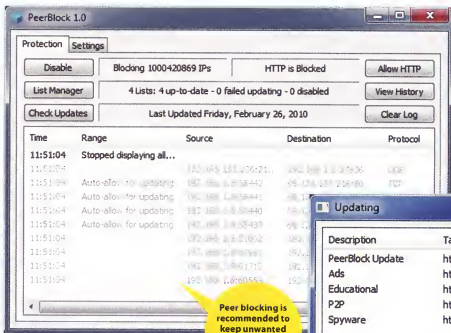
## CAP YOUR SPEED

A BitTorrent connection has a channel for uploads and downloads. When you start downloading a file, the BitTorrent protocol takes it from a seed [another user on the network who has a full copy of the file], but as you download portions of it, it lets users like you (peers) start downloading parts of it. It's best to tweak your upload/download ratio so that your upload speed is about 80% of total bandwidth.

## PRIVATE TRACKERS

Torrent sites come in public and private (membership only) versions. The public trackers have to service massive numbers of users and will have high leechers to seeders ratios (since many leechers limit uploads). On the other hand, private trackers monitor the upload/download ratios of their members and are more likely to disable the accounts of

## How to get the downloads

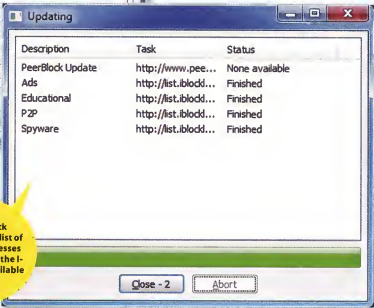


Peer blocking is recommended to keep unwanted users and web sites out of your PC.

PeerBlock can have its list of bad IP addresses updated via the I-blocklist available online.

### PEER BLOCKING

A program that that prevents snoopers is PeerBlock ([www.peerblock.com](http://www.peerblock.com)), which blocks transfer between your computer and "known" bad IP addresses (such as those organisations mentioned below). The lists are regularly updated by the user community with additional bad IP address lists available from I-blocklist at [i-blocklist.com](http://i-blocklist.com). Even if you are 100% within the law, it is wise to install and run PeerBlock just to be safe.



### USENET

An alternative to BitTorrent is Usenet. It has just as much as content and is even faster. But it's not as user-friendly, so it's remained the preserve of uber geeks, plus you have to pay for access to it. Since Usenet is not a peer-to-peer network in which other users host the content, you have to pay a Usenet provider who hosts the files. And because the providers don't want to go broke, they also set download limits each month.

Examples are GigaNews and NewsDemon. Once you've signed up, you download a client like Alt.Bin or SABnz, add the provider's details and you're in the Usenet universe. Compared to BitTorrent, Usenet users are harder to track because there is a direct connection from your computer to the Usenet servers. The downloads are also faster.

leechers with reduced upload ratios. Private trackers also tend to get the newest content faster, since quality and speed of availability is a differentiator. Private trackers require you to be a member by invitation only. So you need to know someone else who is a member and can vouch for you.

### PRIVACY

It's a fairly simple process for third parties to capture the IP of your computer if you are downloading BitTorrents — so why don't copyright holders have the name of anyone who has ever downloaded a pirated movie?

Because many download pirates use a variety of tools to hide the IP address or block snoopers. These are not a bad idea for legal downloaders either. Many people prefer not to share their legitimate online activities with government, organisations who actively discourage peer-to-peer file sharing and various other "net police." If you are transferring legal content there is still the risk of incorrectly getting labelled as an illegal file sharer.

### ANONYMISER SERVICES

Many privacy services hide your IP address by channelling your surfing through VPNs (Virtual Private Networks that link you to their own servers) but many don't allow peer-to-peer downloading. One that does is TorrentPrivacy, which establishes an anonymous and secure encrypted SSH tunnel from your PC to its various servers around the world and makes your browsing invisible even to your ISP. Such is

the demand for services like TorrentPrivacy that you need to pay for the good ones. TorrentPrivacy costs US\$99.95 a year (or US\$9.95 a month). 'Itshidden' is a similar service and offers a free version that works only in 20-minute blocks but gives you a sense of how it all works. This one works by getting you to set up a VPN by configuring Windows itself.

### PRIVATE TRACKERS (AGAIN)

Private trackers are also good for ensuring privacy — they are far less likely to carry malware or have snoopers. The internet is full of tips on how to get invites to private trackers, but in short, unless you know someone who can send you an invite, you need to look for private trackers having open signups (when launching or when their memberships drop), do "interviews" with the sites or hang around relevant forums and make yourself known enough to get an invite. Some sites show private tracker sites with open signups.



Feeling Lost?  
Check out our  
guide to legal TV  
catchup online.

# TV catchup sites

Aside from BitTorrent, there's a legal way to access all the latest TV.

The iView web site at [www.abc.net.au/iview/](http://www.abc.net.au/iview/) allows you to catch up on shows that you may have missed on ABC television. In order to use iView you will need a fast stable broadband connection (ideally able to stream around 1.1Mbit/s). One of the best features of iView is that some ISPs, currently AARNet, Adam Internet, Apex Internet (TransACT customers only), Cinenet, Comcon/SPIN, iiNet, Internode, iPrimus and Westnet have peering arrangements that means that the content is unmetered so viewing shows does not count towards your download quota. Other ISPs, however, do meter the content, so you will need a reasonably high download quota if you use this service.

Channel 9/Win, Ten, SBS and Channel 7/Prime offer similar services on their respective web sites NineMSN portal ([video.ninemsn.com.au](http://video.ninemsn.com.au)), [www.ten.com.au](http://www.ten.com.au), [www.sbs.com.au](http://www.sbs.com.au) and Yahoo! Plus? ([au.tv.yahoo.com/plus?](http://au.tv.yahoo.com/plus?)). These sites let you catch up on TV shows as well as providing extra content that complements television programs. You will need to sit through advertisements but it is a legal way of

viewing shows that you missed.

The limitation is that all of these services use embedded Flash, which means that you can only watch the content on your computer and cannot download it to your hard disk if your connection is not up to speed. iView and SBS give you the option to view full screen but the commercial offerings mainly play in a small window amongst the banner ads. Like their overseas counterparts, content viewing is restricted to people in Australia, so if you are travelling overseas and still want to catch up on your favourite programs, you will need a VPN connection back to an Australian IP address in order to watch the content.

## OVERSEAS TV CATCHUP SITES

While the ABC leads the way with iView, the video quality of the content is nothing like that of some sites overseas. The BBC's iPlayer shows not only every program on TV, but at a much higher quality. It's a similar story with TV catchup sites such as Hulu, the portal for NBC, ABC ([abc.go.com](http://abc.go.com)), CBS and Fox. But the trouble

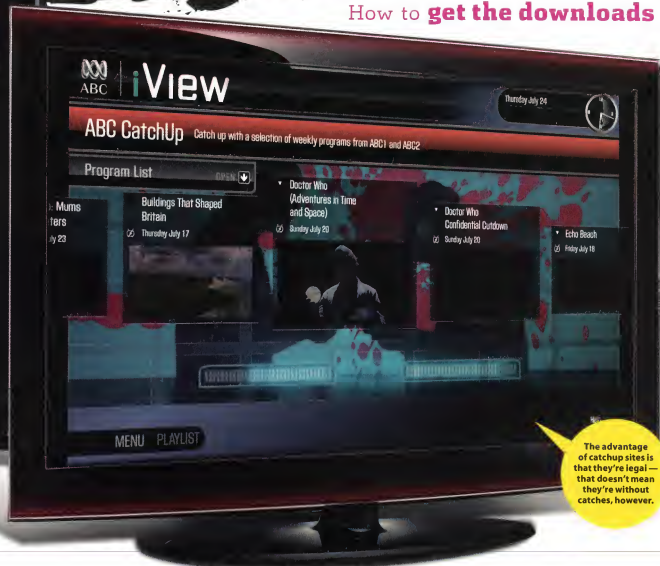
is that most of these sites can only be used by people in the US or UK for the BBC due to copyright and licensing restrictions.

If you go to one of these, you will be told the content is not available to you. Do you think this stops download pirates? Of course not. They have various ways of bypassing the restrictions. They use proxy servers or VPN tunnels to catch up on their favourite TV shows, making their computers appear as if they are in the US rather than Australia.

## PROXY SERVERS

Proxy servers are computers set up to literally "pass the parcel"; in other words you request a web site (or TV show) and the proxy server in the relevant country outside Australia requests the web page on your behalf using its own IP address. In theory all you need to do is find a proxy server in the US, request the content from the overseas media site and the proxy server will stream the content to your PC.

In practice, this will not work, as most proxy servers do not handle Flash (the software that



displays movies] which means you can access the overseas web site, but not actually watch the movie. Even if you find a Flash-enabled proxy, chances are that it will be blocked by the overseas sites in order to prevent them breaching their licence conditions by permitted content to be streamed overseas. Finally, going through a proxy is often far too slow for streaming media. If you want to try your luck with a proxy server, you can visit [www.publicproxyservers.com](http://www.publicproxyservers.com) for an up-to-date list of public proxy servers.

Paid proxy servers may be a little better but we were not prepared to hand over our credit card to unknown organisations. If you are prepared to take the risk, you will probably be disappointed, as the proxy is likely to have been blocked by the content proprietors and is unlikely to perform much better than the free public alternatives.

### PRIVATE VPN CONNECTIONS

Whilst no means guaranteed, the most reliable way of accessing these sites is to set up a

private VPN (virtual private network) connection to someone located in the US (or UK). To do this you will need someone in the US who will let you access their network and be prepared to load VPN software on their server. You can then connect to their network using the VPN client and browse the net from their IP. For all intents and purposes you will have a real US IP address that will work. There are no proxy servers involved, so provided the connection speed is fast enough you should be able to tunnel content down the VPN connection as if you were back home.

### PUBLIC VPN CONNECTIONS

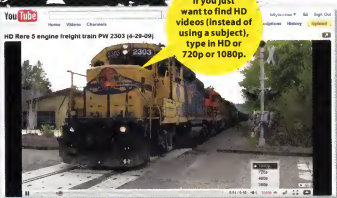
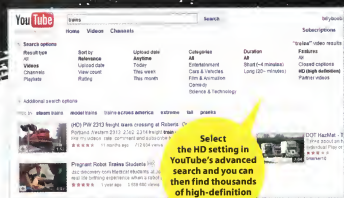
If you don't have access to a US network, you could try some of the public VPN providers on the internet. Hotspot Shield offers free public VPN services in return for you watching their pop-up advertisements and being able to monitor your browsing habits. Simply download the Hotspot VPN client, allow it to install and connect to the Hotspot VPN server in the US.

We tested Hotspot Shield and found it was hit and miss, as content providers such as Hulu would regularly block the known Hotspot IP addresses. However, if you manage to connect to a server that Hulu (or other content providers) aren't aware of and if your internet connection is fast (and reliable) enough, standard-definition content streams beautifully although "high" definition (480p) tends to be jerky. If you are unsuccessful, you can always try to reconnect in the hope that you'll get lucky with an unknown US VPN server.

### PAID VPN SERVICES

Another option is to subscribe to a paid VPN service. This means you aren't annoyed by pop-up ads and probably will obtain better connection speeds, but you have to be comfortable handing over payment details (credit card or PayPal) to an organisation. There is still no guarantee that IP addresses won't be blocked by content sites; however, the chances of being blocked are less likely.





# Free general streaming sites

YouTube now gives you the ability to search in high definition.

We all know about YouTube — and its grainy clips. The most exciting development is that YouTube is now accepting HD videos and they are starting to appear in big numbers on the service. You can now search for HD-only video, which if watched on TV or projected on a big screen look spectacular. The spread of affordable HD camcorders and cameras with HD movie capability means you can now view or download content that no longer looks like rubbish on a big screen. YouTube has also introduced **youtube.com/xl** version of the service designed to be viewed on big TV screens.

Other YouTube-like video streaming sites include Veoh (which includes free TV shows, provided you are using a US IP address), Megavideo, Supernovavideo and even Google video, where, by searching for videos longer than 20 minutes via the advanced search, you can find lots of movies and documentaries!

Go to **apcmag.com/hd** for a list of spectacular HD content on YouTube.

## YouTube DOWNLOADERS

If your Internet connection is not up to speed (for example, wireless broadband or some budget plans), the picture and sound will pause whilst the clip buffers. This can be annoying, so there are free tools to prevent this. One is Download Helper (available from **www.downloadhelper.net**). It's a Firefox browser extension that allows you to download YouTube clips to your hard drive where you can watch them using VLC media player or another Flash-enabled player, such as FLV player. But it's not the only one. There are many others, for Firefox, Chrome and IE.

# Free libraries

It might not be the latest and greatest, but there's a lot of free content online.

You may not be able to download the latest television series or full-length Hollywood movies, but there are enough video clips around to suit all tastes.

Whilst you won't find any (modern) Hollywood blockbusters here, there are many hours of historical movies and cartoons, arthouse films and home movies available on free video libraries on the web.

The Internet Archive (**www.archive.org**) contains thousands of hours of classic cartoons (that Baby Boomers and Gen-X grew up with), vintage televisions, experimental cinema, foreign language films, arthouse collections and video mashups that can be viewed online or downloaded in a variety of formats including MPEG-2 (for burning directly to DVD), OGG, MPEG-4 (for watching on iPhones, iPod touch and mobile phones) and DivX.

Being a free and open archive, there are no DRM restrictions and you can be assured the content is free from viruses and spyware.

If you are after more Australian content, you can visit the online video archives at the Australian Centre for the Moving Image (**www.acmi.net.au**) or go back in time to view classic Australian films at **www.filmpreservation.org**.

Is it a Sony? If so, legal video via your Bravia may be a possibility.

## WATCHING VIDEO THROUGH YOUR TV!

Internet videos are coming directly to TVs. Several IPTV channels will display directly on selected new 2010 model Sony Bravia TVs. These include Billabong, Wired, GolfLink, eHow, Epicurious, Blip and Style.com. Other sites include Videojug (great and not-so-great how tos), wiiTV (live TV, mainly foreign language or special interest), Justin.tv (a mix of live TV and clips) and AustraliaLiveTV (advertiser-produced programming).

# QNAP is "READY", Are you ready?

The Turbo NAS is certified as compatible with VMware's vSphere4 (ESX 4.0) virtualization platform. The NAS can be utilized as the networked shared storage of VMware virtualization environments and Windows cluster servers. Comparing with traditional SAN (Storage Area Network), the Turbo NAS is a competitive alternative with much lower setup and maintenance costs in an IP SAN.

## Fantastic warranty option available

Update to 2 years Advance Replacement OR  
even 3 years Advance Replacement.\*

vmware  
READY

vmware  
PARTNER

TECHNOLOGY  
ALLIANCE



TS-859 Pro



TS-459 Pro



TS-259 Pro



Dual-Core  
1.66GHz CPU  
1GB DDR2 RAM



vmware  
READY

TS-259 Pro/ TS-459 Pro/ TS-659 Pro/ TS-859 Pro

\* Intel® Atom® D510 1.66GHz (Dual-Core)

TS-239 Pro II/ TS-439 Pro II

\* Intel® Atom® D410 1.66GHz (Single-Core)



TS-659 Pro

\* QNAP shall not be liable for technical, editorial or pictorial errors, inaccuracies or omissions contained herein

bluechip  
infotech

CAIR Centre 1300 72 74 74  
www.bluechipit.com.au

National  
Harris Technology 1300 13 9999

VIC  
Centre Com P/L 03 9311 7600  
City Software P/L 03 8542 2200  
Cnet Technology 03 93182289  
Landmark Computer 03 9899 4424  
Scrivener Computers 1300 72 8720

NSW  
Internet Technology Corporation 02 8004 3033  
Mwave 02 9649 5187  
Skycomp Technology 02 9011 2078  
Techbuy Pty Ltd 02 9648 1818  
Capitol Computers 02 9281 8890

SA  
Murray Computer & Office Shop 08 8532 5577  
Blomax Computers 08 8532 5577

QLD  
Media Players and More 07 5580 4508  
Umart Online 07 33693828  
PC Ezy 07 3359 6777  
Beta Computer Services 07 3809 2999

WA  
File Computers Pty Ltd 08 9309 4771  
Austin Computers 08 9201 2788

# How to play back videos on the Xbox 360

**Nick Race** shows how to stream videos from your PC to a TV using the Xbox.

Just as in the PlayStation 3 tutorials, the Xbox 360 is capable of playing back media served by a DLNA server running on a PC and letting you view it on the attached TV. In this case, we can use a very simple method, with no additional software from a Windows PC, but we've also put together a method using a third-party DLNA server with more functionality and support for Mac and Linux.

The first method involves serving media from a Windows Media Player (versions 11 and 12) library. Windows Media Player 11 works with both Windows XP and Windows Vista, while WMP 12 is for Windows 7 only. The method is the same in both versions.

To get started, we first need to import our video files into WMP's library — we can't just serve them from a directory, which may be a deal breaker for some. WMP will automatically add any files in the My Videos or Videos library in Vista or Windows 7 respectively; so if your videos already live there, there's nothing more to do.

**1** In case they are stored elsewhere on your PC, you can add the directory in which they are contained to the WMP by opening up Windows Media Player, then clicking on Now Playing in WMP11 or Play in WMP12. Click on Organize, then select Manage Libraries and Videos. This will show a list of folders that WMP monitors for video content. Click on Add, select the folder that contains your videos, then click Include Folder. Now WMP knows the location of your video files.

Next, close the Videos Library Location screen and click on the Library side bar on the left-hand side of the Play

or Now Playing screen under videos. Check that the videos from your collection are being shown.

**2** Now, to enable streaming of these video files for the Xbox (and any Media Extenders on your network), in WMP12 click on the Stream drop-down menu and select Turn on Media Streaming.

**3** It will turn on the Media Streaming Options screen in Control Panel. Click on the Turn on Media Streaming button.

**4** In the next screen name the media library — in this case we're calling it notebook, as it's running from one of the notebooks in our Labs. If you're running multiple PCs in the house, then each can act as a server, so you want them to be uniquely named to avoid confusion. Underneath will be shown the list of devices on your network that you can stream to. Make sure your Xbox 360 is on the list and its drop-down box is set to Allow. If there are other PCs on your network you don't want to share media with, set them to Blocked.

**5** Next, jump over to your Xbox 360. In the Home screen, go to the Video Library tab. (Not the Media Center tab). Activate it, and in the list will be the name of the PC serving the video. Press down on the controller until it's selected, hit the green button, then a list of the media being served to the Xbox will be shown. Choose the video you want to watch and voila!

**6** You may be prompted to connect to Xbox Live and download a small update. It will only take a moment — and allows the Xbox to play back DivX content.

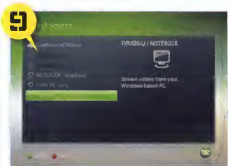
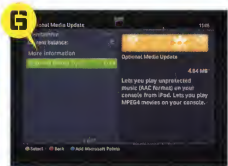
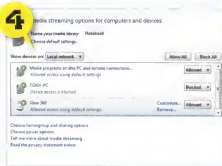
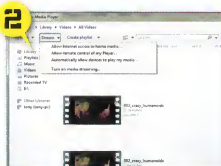
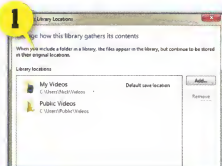
**WHAT YOU'LL NEED**

A WINDOWS PC  
With Windows Media  
Player 11 or 12 installed

XBOX 360  
On which to play  
your video

TVMOBILI  
From [www.tvmobili.com](http://www.tvmobili.com)

# How to play the downloads



## STREAMING WITH TVMOBILi

TVMOBILi, like Tversity used in the PS3 How To, is a DLNA UPnP server that can serve video content to any DLNA UPnP device (including the Xbox 360 and PlayStation 3). It doesn't support transcoding the video files though; if that's what you need, then consider using Tversity from the PS3 How To — the process is exactly the same.

First, download TVMOBILi from the web site [www.tvmobili.com](http://www.tvmobili.com). It's available for Windows, Mac OS X and Linux, but we're concentrating on Windows here today. Run the downloaded installer file — it's simple, with no options (and nothing to get wrong...).

Once it's installed, it will open up your web browser and show the basic Home screen, which will allow you to browse content once we've added it.

Click on the Settings link on the top right of the page, which will bring you to a very simple setup screen. All we need to do here is to enter the folder in which our videos are stored. In our case, it's C:\Video, so we click on Browse, select the directory and hit OK. Enter a description if you need to, something like "My Video Collection", and hit the Submit button.

Under My Directories, it will show the added collection of videos with the description you entered. You can now close the web browser.

The next step involves opening ports in the Windows firewall to allow the Xbox to connect to the TVMOBILi server. Open Control Panel on your PC, then select Windows Firewall. Select Advanced Settings and you'll be presented with a new window containing the overview of your firewall settings. Click on Inbound Rules on the left-hand column, then New Rule in the right-hand column. A wizard will pop up, asking for

what type of rule we're creating. Make sure "Port" is selected, then click Next. In the next screen make sure TCP is selected, then underneath in the Specific Local Ports box, enter 30888, which is the port TVMOBILi uses to serve content.

Click Next, select "Allow the Connection" and click Next again. Untick the Public Box (for Windows Vista and Windows 7 users), as we don't want any ports open when we're on an unsecured network. Click Next, and name the profile; something like TVMOBILi-UDP is acceptable. Click finish, and we're done. Close the Firewall screen and Control Panel, and slip across to your Xbox.

In the My Xbox tab, open the Video Library tab with the green button. In the list you should see an entry for TVMOBILi [your PC name]. Select that entry and navigate through to your videos. And it's done!

# How to play back videos on the Sony PS3

**Nick Race** shows how to stream videos from your PC to a TV using the PS3.

Playing downloaded files on your PS3 is not as straightforward as it could be. Considering the processing power and internal storage on the PS3, it should be trivial to allow video decoding and playback on it of all kinds of formats. Alas we have to make do by streaming content over a network using a server. The two options here are Tversity and PS3 Media Server. PS3 Media Server is recognised as having wider file format support and is a bit snappier to use, while Tversity is a more polished product. We'll cover both and let you make your own decision.

## STREAMING WITH PS3 MEDIA SERVER

PS3 Media Server is a basic, brass tacks software package for playback to PS3 consoles over a network. It has the ability to transcode video formats the PS3 doesn't understand natively, and can run as a Windows service in the background. It's stable, powerful, but a bit daunting when you first start it up.

To begin, we need to download and install the software package for our PC. PS3 Media Server supports Windows (including Windows 7), Mac OS X and Linux, but we'll only be looking at Windows for this tut. The files are available to download from <http://code.google.com/p/ps3mediaserver/downloads/list>.

Run the installer, with all default options. It's important to install the app as Admin, as we'll be setting it as a service later on. If you do not have Java Runtime 6 installed, the installer will download and prompt you to install it before the process can finish.

- 1 Start the software from the final install screen and, provided your PS3 is connected to your network, we'll see the following screen (above right).

Considering that 99% of the time we won't need to adjust any advanced settings, our first port of call is the General Configuration tab, across the top of the screen. You have a choice to make here. We are able to install this software as a service, in which case Windows will automatically start it when Windows starts and we won't have any interaction with it; if the PC is on, it's running. The other option is to run the software manually: just double-click the software's icon from the desktop or start menu and we're off and running.

- 2 To install PS3 Media Server as a service, in the General Configuration tab, click Install as a Windows Service button. The following dialog box will appear. Close the box — we'll come back to that later. The only other configuration we need to do at this point is to provide the PS3 Media Server with a video library to serve. Without doing this, it offers all your hard disk drives to the PS3, which can be a security risk (and an invasion of privacy).

- 3 Click on the Navigation/Share Settings tab across the top of the screen. At the bottom of the next screen, under the Shared Folders heading, click on the icon of a green cross and folder. This will bring up a navigation dialog, so go ahead and select the directory in which you keep your video files. In this case, we've selected C:\Video.

At the very top of the application, click the large floppy disk 'Save' icon, then click on Restart HTTP Server just to the right. This is enough configuration to see whether the PS3 can access the content from PS3 Media Server.

- 4 Over to the PS3, turn it on and navigate using the XMB [Cross Media

## WHAT YOU'LL NEED

**A PLAYSTATION 3**  
To stream media to

**A WINDOWS PC**  
To stream media from  
(Windows 7, Vista or XP)

**PS3 MEDIA SERVER**  
<http://ps3mediaserver.blogspot.com>  
OR Tversity Free  
[www.tversity.com](http://www.tversity.com)



## How to play the downloads



Bar) to the Video tab. Under this menu there should now be an entry for PS3 Media Server, then the name of the PC doing the serving in square brackets. Congratulations, you're serving media to your PS3!

For the advanced setup, we're going to run the application as a service when Windows starts. This means we don't have to remember to start PS3 Media Server every time we want to watch something using the PS3.

Navigate to Control Panel > Administrative Tools, then select Services. In the list that comes up, scroll down and find the entry for PS3 Media Server. Right-click on the PS3 Media Server entry and in the Startup Type drop-down box select Automatic. Hit OK, close the Services screen and we're done! PS3 Media Server will now start in the background every time Windows boots. Completely hands off.

### MEDIA STREAMING WITH TVERSITY

Tversity adds in a lot of functionality that, frankly, isn't that useful in Australia. It's Pro

features (for the paid version of Tversity) is built around internet streaming of BBC, Hulu etc, which aren't available for Australian users. The Free version gives the same functionality as PS3 Media Server, with a bit more spit and polish. Anecdotally, it has more issues with transcoding, but we do not have hard evidence to support that. Both can be installed and used, so feel free to experiment with both!

**5** Download the Tversity free version from [www.tversity.com](http://www.tversity.com). Click through the install process (and choose whether to install the Ask.com toolbar or not) then ensure that the options to Run the Necessary system and firewall configurations (and the Codec pack and ffdshow) are both selected. Choose whether to install the "sponsorware", and finish the installation.

**6** Once it's done, we can open up Tversity to the main screen.

**7** From here, click on the Library tab at the top of the screen, and then click on File System under the Sources heading on the left-hand side. Select "Folders" and click the Add Item icon at the top centre of the screen.

This will bring up the Add Media screen, where we can select the directory on the PC that contains our video files. The easiest way is to click on Browse at the bottom right of the menu screen, and navigate to the directory in which you store your video. Click OK, then Click on Submit. Tversity will now churn through the video files and add them to its library. Once that is finished, feel free to close Tversity, which will continue to run in the background.

**8** Head on over to your PS3, and under the Video (and audio and photo) Tabs on the XMB, you'll see the Tversity icon.

Select it, choose the file to play and you're off and watching. Tversity will serve any video files you put in the directory you chose to add to the library.

# How to play back videos on a PC

Playing video files correctly is not always as simple as a double-click. **Nick Race** shows you how.

The many different encoding formats and container files that abound on the net means you'll often have to chase down a codec or two to get things working as they should.

We'll start from scratch, assuming you've got an untouched installation of Windows Vista, XP or Windows 7, and some files to play in different formats. You're most likely to see the following file types when playing back downloaded movies: AVI, MKV, MOV and MPG.

These are video container files, which contain the video, audio, subtitle and sometimes image files that make up the video you watch. Though the extension gives you a hint as to what you need to decode the files, it's not always obvious. The actual codec used in the file types above can be anything from DivX to XviD, H.264, to plain MPEG-2 and rare HD codecs and open source competitors.

Though your media playback software can open the container files, it doesn't always know what to do with the video files inside it. Sometimes, it can open the video, but doesn't know how to play the audio.

To fix this we need codecs. Codecs allow us to decode the audio and video so we can watch it on the PC. Thankfully, many codecs are related or derivative, so we can use one to decode others.

What we'll do to enable playback of as many file formats as possible is install a number of different codecs, which Windows will automatically use to decode video and audio when required. This is a shotgun approach, and lets us stop worrying if we're able to play something and just sit back and watch it.

A huge chunk of our decoding requirements can be taken out with a single download: ffdshow Tryout. This is an open source, free collection

of video and audio codecs, and it supports our big three: XviD, DivX and H.264, plus AAC audio, DTS and all kinds of audio streams included with online videos.

Thankfully, this version of ffdshow runs with a good selection of default options to get us up and running right away. Download the file from the SourceForge repository at <http://ffdshow-tryout.sourceforge.net/>. Once you have the downloaded file, double-click to run it. Its installer is just like every other software installer; choose an install location (we always go with the default). Next it will ask you about components to install. Just make sure VFW Interface is selected, which will allow Windows to interface with ffdshow.

The other options have to do with encoding video using specific video processing applications, and aren't applicable here.

Next you'll be asked to Select Additional Tasks. This is the screen where we associate the video types that ffdshow Tryouts can decode. You should just leave these options as they are; it will cover the main types of files we're trying to watch.

Next, choose your speaker setup; this allows ffdshow to configure itself for the correct audio output for your system. In this case we're installing on a notebook, so stereo speakers are applicable.

When you complete the setup wizard, there's no need to select to run the configurations, we've just done the basic configuration in the setup. The codecs will work in most video players, including Windows Media Player. If there's a file you just cannot watch using this method, download and try to play the file in VideoLAN Client (VLC), a free, open source playback app with support for codices of video and audio codecs, from [www.videolan.org](http://www.videolan.org).

## WHAT YOU'LL NEED

### A WINDOWS PC

This method is for Windows XP, Windows Vista and Windows 7.

### FFDSHOW TRYOUT

Available from [ffdshow-tryout.sourceforge.net](http://ffdshow-tryout.sourceforge.net).

# Seagate FreeAgent Theater+ HD

The easiest way to move and enjoy your photos, movies and music from your PC or Mac to your TV.

The FreeAgent Theater+™ HD media player provides an easy way to store and move your photos, movies and music from your PC or Mac® computer to your TV, allowing you to share and enjoy your digital media right in your living room.

The FreeAgent Theater+ HD media player solution consists of two components

- An HD media player, and
- FreeAgent Go™ portable hard drive.

With two easy steps, you will be viewing and sharing your favorite photos, movies and music in no time:-

- From your home computer, use the included sync software to automatically copy all of your media files to the FreeAgent Go drive, or simply drag-and-drop files directly to the drive.
- Dock the FreeAgent Go drive into the FreeAgent Theater+ HD media player, connected to the TV

FreeAgent puts your entire media library at your fingertips with 1080p high-definition playback and crystal clear surround sound audio.

With the front-mounted USB port, you can also plug your digital camera, digital camcorder, USB flash drive, or external USB hard drive directly into the FreeAgent Theater+ HD

media player and enjoy the same high-quality viewing experience.

With the built-in Ethernet port the FreeAgent Theater+ HD media player can connect to your home network to access content from shared devices, including networked computers and NAS.

The network connection also allows the Theater+ HD media player to access Internet content.

Browse your files with a familiar folder structure view, thumbnail view or filter by media type such as movies, pictures or music.

## HIGHLIGHTS

- HDMI connectivity and 1080p HD video playback.
- Dolby® Digital and DTS® audio support
- Ethernet connection for accessing shared content on your network.
- Unique docking system eliminates fumbling with cables and connections.
- Front-mounted USB port for additional storage devices.
- Includes sync software for PC and Mac®.
- Intuitive user interface with DVD-style navigation.
- Windows® XP, Vista®, Windows® 7, and Mac OS® X compatible.
- AV Cable, Ethernet Cable, component cable, Setup & user guides all included
- Backed by Seagate 1 Year Limited Warranty

RRP  
\$219



Synnex Australia

1300 100 100

[www.synnex.com.au](http://www.synnex.com.au)

Ingram Micro Australia

1300 651 124

[www.ingrammicro.com.au](http://www.ingrammicro.com.au)

Pre-Sales

and Technical Support

1800 147 201

[www.seagate.com](http://www.seagate.com)

Seagate



FreeAgent  
**Theater+**  
HD MEDIA PLAYER



# WINDOWS MEDIA CENTER

Easily the best way to manage your downloaded videos and turn your PC into a movies and TV hub is to use Windows Media Center software. Media Center expert **Mike Le Voi** shows how to set it up properly.

Why use Windows 7 Media Center when there are other programs like Windows Media Player and VLC for playing your music and videos? There are two major reasons. One, it supports TV tuners. These are now readily available as desktop cards or notebook USB sticks. The supplied TV tuner software is usually OK, but Windows 7 Media Center generally has more features. In addition, some supplied software does not work with Windows 7. The other reason is the "10 Foot Experience". It is not easy to use normal Windows programs sitting on a couch when the PC and LCD or plasma screen is 3 metres or more away. You need a User Interface where all the on-screen controls are larger than normal and preferably a remote control designed for this scenario.

## THE 3 VERSIONS OF MEDIA CENTRE SO FAR

**1** XP Media Center Edition (MCE). This version was not very popular as you could not add MCE support to Windows XP after purchasing XP Home or XP Professional. You either bought the version of Windows XP with Media Center, or you missed out. However, it was relatively stable, and since it was based on XP Professional you could use Remote Desktop to control it.

**2** Vista Home Premium or Ultimate. A big improvement over the original MCE, but Vista Home Premium had no Remote Desktop support. Remote Desktop is almost essential for controlling and managing a PC that is on the other side of the room with no easy way to use a mouse and keyboard. Vista Business has Remote Desktop but, amazingly, no MCE support. You needed Vista Ultimate for Media Center and Remote Desktop. To manage Vista Home Premium you can use something like VNC for remote management, or a hack to enable Remote Desktop. The hack is to the Terminal Services DLL to allow access on Home Premium. You can find a version here: [www.forwardthinkingtech.com/2009/07/25/vista-home-premium-terminal-services-hack-sp2/](http://www.forwardthinkingtech.com/2009/07/25/vista-home-premium-terminal-services-hack-sp2/).

**3** Windows 7 Home Premium or better. As with Vista, Home Premium does not have Remote Desktop. However, the Windows 7 pricing model means that it is probably better to simply get Windows 7 Professional, as that has XP Mode and other goodies for very little extra cash when bundled with a new PC.



# Setup and optimisation

How to set up your media centre the right way.

Setup is quite straightforward. You use the setup options to define the monitor type, screen dimensions and the audio components. For TV reception, you simply setup the TV signal, scan for channels and then customise the TV Guide to match what channels you want to use or suppress.

With a USB TV stick, make sure that you first plug it in and install the driver in the order stated by the manufacturer. Also, do not move the USB TV stick from one USB port to another. Windows 7 is likely to detect this as a new and different TV tuner. Even worse, Media Center will think that the old hardware has disappeared and that new hardware has been added. This means that you will have to repeat the whole tedious process of scanning for channels and setting up the guide!

With XP and Vista, you needed registry hacks to control important features. For example, maximum pre-recording padding was 4 minutes, as was the maximum post-recording padding. Thank goodness Microsoft listened to user complaints as now you can set pre-padding up to 15 minutes and post-padding up to 30 minutes. In addition, when you click record in the Guide, you can use

'Actions > Advanced Record' and set a special post-padding amount for that early morning program which you know is not going to stop at the correct time.

With Windows 7, there is only one registry hack you probably still need to apply. Default TV and video skip amounts are 29 seconds forward and 2 seconds backwards. As fast forward and rewind do not work on almost all videos, you probably want to change this. I choose 2 minutes forward and 29 seconds backwards. This is sufficient to skip through most videos and to skip backwards when you go too far.

### THE VALUES TO CHANGE ARE ALL IN:

HKEY\_CURRENT\_USER\Software\Microsoft\Windows\CurrentVersion\Media Center\Settings\VideoSettings

The registry keys are SkipAheadInterval and InstantReplayInterval. Edit these in decimal and set them to 120000 (120 seconds) and 29000 (29 seconds).

## NEW IN WINDOWS MEDIA CENTER 7

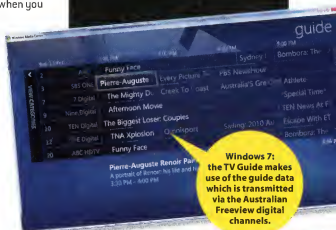
Compared with the versions for XP and Vista, there are some great new features.

- **TV Guide.** The old versions of Media Center expect the TV guide to be supplied via the net. In the USA, this is commonplace. In Australia, however, the TV stations do not provide such a facility and we have to use software like IcfTV or epgStream. In Windows 7, the TV Guide makes use of the guide data which is transmitted via the Australian Freeview digital channels. As with Vista, you can set up recording schedules for a week in advance either by scanning the guide manually or via search.

- **Built-in support for DVD and video libraries on hard disk.** This means that you can rip or convert all your home video DVDs to hard disk and just watch them when you want.

- **Far better video codec support in Windows 7.** Codecs (coder-decoder) are used to encode and play back the many types of video formats that you can find. With Vista, you needed many or varied codec packs. With Windows 7, the only major omission is MKV (a video container file type) and some H.264 (a recent video format) support. You can add this support with something like Shark007 Windows 7 codecs (<http://shark007.net/>) but we have chosen not to do this. For the odd MKV file, we use VLC.

- **Music features are similar to Vista.** The difference is that an all important Search facility has been added. It is better than nothing, but it is still a poor relation to that provided by Windows Media Player 11 or 12. For example, a search for "Beet viol conc" will yield results in Media Player. The same search in Media Center says "No results were found".







# Using Media Center to watch content

What's the easiest way of getting media onto disparate old and new PCs around the house? **Mike Le Voi** has figured it out.

If you have all the latest and greatest kit, you can use Media Center on your PC to stream media to other devices using such protocols as DLNA. However, many of us only have older PCs that simply get redeployed when new stuff arrives.

You can use media extenders like an Xbox 360 to stream TV (covered on page 60). However, in my case I have just opted to use dedicated TV tuners and watch the TV on the PCs.

## OBTAINING THE TV CONTENT

USB TV tuners are cheap and work great as long as they are plugged into a TV antenna wall socket. The supplied aerials are not much use unless you live very close to a transmitter.

Also, having multiple TV tuners allows you to record multiple programs at once.

## SHARING THE CONTENT

XP and Vista do not support Windows 7 homegroup networking. So, I simply share 3 "Read Only" folders: one for Pictures, one for Music and one for Video and recorded TV programs. The XP and Vista PCs connect to the required shares and play the content using Windows Media Player, VLC or Vista Media Center.

## CONVERTING RECORDED TV

I often record late night TV programs on the Windows 7 desktop in the study. However, I normally want to watch the recorded program upstairs. This is not as easy as you would like.

XP and Vista record TV in DVR-MS format. Windows 7 records in a different format called WTV. XP will not play WTV files. Vista is supposed to be able to play WTV files, but my copy of Vista does not. Windows 7 plays both formats, of course.

Luckily, Windows 7 provides an easy way to convert WTV files to DVR-MS files. The simple way is to 'Right Click' the WTV file and choose the option 'Convert to .dvr-ms Format'. Alternatively, you can create a simple BAT file as follows:

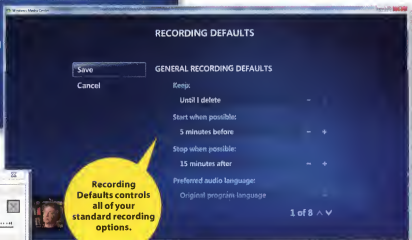
```
@echo off
```

```
C:\Windows\home\wtvconverter.exe "%User%\Public\Recorded TV\*.wtv"
```

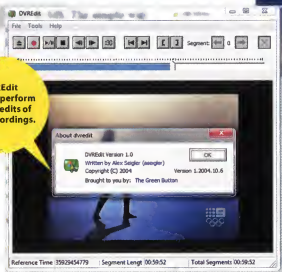
## How to play the downloads



Edit Channels lets you change channel settings.



Recording Defaults controls all of your standard recording options.



DVREdit lets you perform simple edits of your recordings.



Depending on formats, you may need to convert files or launch them with another program.

If you wish to automate the process, use Task Scheduler to create a task that wakes the PC at 6am and runs the BAT file. That way, any TV shows you have recorded overnight will be automatically converted to a format which can be played by XP and Vista.

Windows Media Player uses about 15-20% of the wireless G networking bandwidth to play a streamed DVR-MS file. If your wireless network connections are not reliable, you probably want to convert the files to MP4 format before attempting this.

You may want to "top and tail" the DVR-MS file before you convert it. The easiest way to do this is to use DVREdit, a simple to use editor - get it here:

[http://jeffregriffin.com/files/folders/dvr\\_ms\\_conversion/entry153.aspx](http://jeffregriffin.com/files/folders/dvr_ms_conversion/entry153.aspx).

If you do not like watching adverts, you can use Lifextender ([www.lifextender.com](http://www.lifextender.com)) to automatically cut them out. There are many configuration options so be prepared to experiment.

Also, in my experience, automatic skipping of commercials does not always work. So, be prepared to convert the WTV file to DVR-MS again if you lose bits of the TV program that should not have been removed.

Finally, you can convert the DVR-MS file to MP4 format by using a utility like MCEBuddy (<http://mcebuddy.com/>). Unlike Lifextender, MCEBuddy works with WTV or DVR-MS files.

It is designed to run as a Windows Service and scan the contents of a directory and automatically convert any WTV and/or DVR-MS

file that it finds. You define the available start and end times for conversion and the source and destination directories.

The resultant file is much smaller than the DVR-MS file. A 50-minute TV show will compress down to about 500MB. When played, only about 2-3% of the wireless networking bandwidth is used.

The final hurdle is actually playing the file. XP and Vista do not have native support for many codecs. So, you usually need to install a codec pack. I use the Vista Codec pack from Shark007 (<http://shark007.net/>) on the XP and Vista PCs. It is mostly stable and all files play fine using Windows Media Player and Vista Media Center. Again, for less common video formats like MKV, I use VLC.



Depending on your version of Media Center, you may or may not have remote support.

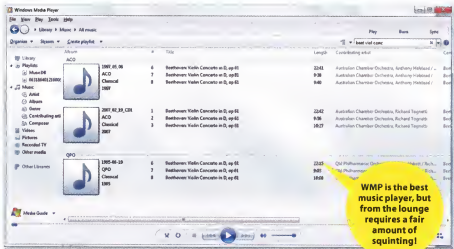
Music options: because "media" doesn't just mean movies!

# Play music

For long-range music control, you can't beat 7's MC.

On any Windows platform, the easiest way to catalogue and play music is Windows Media Player. As previously discussed, Media Center is less than ideal for playing music as the search criteria are limited. If you do proper tagging, you can find what you want much more easily in Windows Media Player. However, for the "1D Foot Experience", Windows 7 Media Center wins as it allows a method of finding the album you want to play using simple searches and album covers. Windows 7 Media Center has some new great features compared with Vista. Add a cheap USB TV tuner and you will soon be

enjoying TV, your movies and your music on your notebook or desktop. The only strange configuration in the above is the use of the MCE Remote with the XP Pro notebook. Windows Media Player 11 doesn't support most features of the remote. However, the Kaiser Baas USB TV tuner came with CyberLink PowerCinema for watching TV. This software supports many of the buttons on the MCE Remote Control: TV Guide, Live TV, channel, volume, mute and pause/play buttons. WMP 11 supports volume, mute and play/pause buttons so it is used for watching DVDs or movies or playing music.



WMP is the best music player, but from the lounge requires a fair amount of squinting!

## KEYBOARD SHORTCUTS

You will soon get fed up using the mouse to control Media Center. Here are the most important keyboard shortcuts for fast navigation:

Win Key + Alt + Enter **Media Center**

Alt + F4 **Exit**  
Alt + Enter **Flip display window/Full screen**

Ctrl + T **Live TV**  
Ctrl + G **TV Guide**  
Ctrl + O **Associated TV**  
Ctrl + M **Mute**  
Ctrl + E **Volume**  
Ctrl + I **Pictures**  
Ctrl + D **Show/hide context menu**  
Back **Backspace (Go to previous)**

Mute **F4**  
Volume Up **F8**  
Volume Down **F10**  
TV Channel Up **Page Up**  
TV Channel Down **Page Down**  
Select TV channel **F5**

Ctrl + P **Play/Pause**  
Ctrl + F **Play next track**  
**(Skip forward video)**  
Ctrl + B **Play last song**  
**(Skip backward video)**

How to **play the downloads**



## MC alternatives

These are more than capable of replacing Microsoft's costly software.

Media Center faces stiff competition these days thanks to freebie software like MythTV, MediaPortal, Boxee and XBMC. MythTV has been knocking around since 2002, and the software provides some good DVR support if you're building a PC for heavy-duty TV recording. Numerous add-on modules can add photo browsing, RSS feeds, Netflix integration and Slingbox-style place-shifting. MediaPortal is unashamedly Media Center-esque, but it has a

limited appeal for TV PCs since it only runs on Windows.

XBMC is otherwise known as Xbox Media Center. What started out as a clever hack for Microsoft's games console has now evolved into an "open-source [GPL] software media player and entertainment hub for digital media". There are versions for Linux, OS X and Windows. Using [www.xbmc.org](http://www.xbmc.org)'s own guide ([tinyurl.com/y26rm3w](http://tinyurl.com/y26rm3w)), you can easily

specify a minimal Ubuntu install before you add the software. XBMC can handle a huge array of video files, and playback can be accelerated using the on hardware. Usefully, XBMC can either launch a compatible player or function with a VOPAU [Video Decode and Presentation API for Unix] modification to the software. It's all there in the XBMC wiki at [www.xbmc.org/wiki](http://www.xbmc.org/wiki).

## Out of the Boxee

A star among the alternatives.

Another Media Center alternative is Boxee. This freeware media centre solution was born out of the XBMC code base, and it brings a social-networking edge to things. Boxee does everything you expect — it catalogues photos, music and video on your PC's hard disk and makes them accessible via a sofa-friendly UI. If you've titled DVD rips correctly, Boxee will pull in the background blur from IMDb.

Boxee apps take things a step further, plugging you directly into a variety of third-party video-streaming services. Log into your account on the [www.boxee.tv](http://www.boxee.tv) web site and you can seek out people you know that are also using the software. Adding a friend to your list will show you what they've been watching or what they recommend.

Boxee is an ideal choice for an Ion-based TV PC, especially as the integrated media player supports hardware-assisted video decoding. Need a cutting-edge remote control to go with it? Type Boxee into the iTunes Store and you'll find a Boxee Remote app that lets you control your Boxee-

powered TV PC with an iPhone or iPod Touch. And if you don't want a PC at all? At this year's CES, D-Link announced the first Boxee Box ([www.dlink.com/boxeebox](http://www.dlink.com/boxeebox)), a dedicated hardware solution that runs the software silently.



# NAS & HOME SERVERS

**Bennett Ring** tests examples of hardware that can store masses of video and music files.

## UNDER REVIEW



ASUS TS Mini



Thecus N2200 4TB



WD ShareSpace 4TB



Seagate NAS 440



NETGEAR Stora



HP MediaSmart Server EX490

## WINDOWS HOME SERVER

Launched back in 2007, Windows Home Server is Microsoft's attempt to make home media servers easy enough for the average Joe Bloggs. It's actually based on Windows Server 2003 (with Service Pack 2), but uses a radically simplified interface. Home Server is also tailored to deliver better file sharing (both on the internal network and remote access), centralised backups and media streaming, hiding most of Server 2003's features that aren't related to these duties.

This OS has only started to take off in the NAS space in the last twelve months, and is usually found on more powerful devices utilising Intel Atom processors. We found NAS devices that used this OS to generally be easier to set up and run than those using proprietary software, as our existing Windows experience translated well to the Home Server interface. Bear in mind that it does contribute to a higher overall unit cost though, with an OEM version of the software currently priced at around \$130.

Until the day arrives when we can upload our digital memories to cybernetic implants located in our carbon-fibre reinforced skulls, we're going to have to make do with storing our digital photos, movies and music somewhere on the home network.

Most folks tend to keep them on a single PC, sharing them out to the various PCs located throughout the home, but it's not the best way to ensure smooth media sharing when multiple users are all chasing their media fix at the same time.

It's also not the safest way to store your media files (especially photos); without regular resource-hogging backups, there's a real risk that your fondest memories will get wiped during a sky-cracking electrical storm.

As home networks started to buckle under the weight of heavy media-streaming demands, a corporate solution for file sharing became a great way for consumers to solve the problem. Enter the consumer NAS (Network Attached Storage), a dedicated machine on the network whose sole duty is to store and serve media files to today's ravenous media consumers.

Unlike corporate NAS, which only techies can comprehend, the home NAS has evolved to better serve the needs of normal human beings. They're easy to set up, with pretty GUIs that even your grandmother can understand (provided she knows how to use a mouse). They also offer dedicated media serving, with most boxes featuring built-in DLNA and iTunes servers to deliver a better streaming experience. Finally, they're cheap as chips, at half the cost of similar SOHO NAS devices.

At the same time, home servers have also started to become popular. These serve the exact same function as a NAS — backups, media streaming and remote access to files. However, they're built more like a regular PC, with today's home servers using an Intel Atom chip and running the Windows Home Server operating system. Because they utilise off-the-shelf PC hardware, they tend to be slightly more expensive than the smaller NAS devices, but offer a wider range of features.

We've taken a look at six of the most popular home NAS and home servers available today, focusing on features, affordability, ease of use and performance. Read on to see the best way to keep your files flowing across your home LAN reliably, while making sure your treasured memories don't disappear the next time your hard drive crashes.



## How to store the downloads

- i
- ★ 2 X 3.5" IN DRIVE BAYS
- ★ 2 X SEAGATE BARRACUDA 7200.12 500GB DRIVES
- ★ 6 X USB 2.0, 2 X ESATA
- ★ WINDOWS HOME SERVER



\$699

7  
10

### ASUS TS mini

www.asus.com.au

- ✓ Silent operation; Home Server is nice (when it works).
- ✗ Not enough internal drive bays; very expensive per GB

#### Does Windows Home Server give it the competitive edge?

With its sleek piano black finish and silent operation the TS mini won't look out of place amongst your designer appliances.

Setting up the TS mini was easy enough, using an ASUS-tailored version of the Windows Home Server Console. Unfortunately we found this software to be a little unstable. Our first attempt to configure it using the Home Server connector worked wonderfully, but it didn't remain that way, with occasional crashes.

Our review sample shipped with two 500GB Seagate Barracuda 7200.12 hard drives, taking up both bays. Getting to the bays is fairly easy, although it does require the removal of the outside case, and three internal screws before sliding out the entire drive section.

An Intel Atom N280 with 1GB of DDR2 provides the grunt, residing on a custom ASUS motherboard which has excellent connectivity options. Six USB 2.0 ports are handy, but most impressive are the two eSATA ports, which help to overcome the shortage of internal drive bays. ASUS includes its own Xtr manager within the Home Server Console, making backing up and synchronizing between the TS mini and external drives easy.

500GB of online storage is offered, however, this is only valid for 12 months, with a subscription fee thereafter. Unfortunately, the TS Mini does not arrive with the iTunes server software installed. It is possible to hack this functionality into the box though. DLNA support is included, so our PS3 instantly recognised and streamed media.

While its external options are fantastic for future upgrades, we'd rather have seen more internal drive bays. The lack of iTunes server functionality is also a little lacking considering the price tag, and the interface needs some work to improve stability.

The TS Mini is a decent first effort from ASUS, but there's still room for improvement. It's also expensive given the small amount of storage.

- i
- ★ 4 X 3.5" IN DRIVE BAYS
- ★ 1 X SEAGATE BARRACUDA 7200.11 1TB DRIVE
- ★ 4 X USB 2.0, 1 X ESATA
- ★ WINDOWS HOME SERVER



\$749

9  
10

### HP MediaSmart Server EX490

http://welcome.hp.com

- ✓ Excellent version of Home Server; stable; fast
- ✗ Expensive

#### HP nails the home server.

HP has taken the Home Server route with this box, using the Windows Home Server software and running on an Intel Celeron at 2.2GHz, with 2GB of DDR2 RAM. Like the ASUS TS mini, it only ships with a terabyte of storage, but it's much more upgradeable. The drive within is a 1TB Seagate Barracuda 7200.12, occupying one of four hard drive bays, leaving you three more bays for the day when your DivX collection starts self-reproducing.

The initial setup of the EX490 is a very friendly, automated affair. It was the only box to automatically hit the net and download the latest version of all software, a great touch that saves hassles down the track. It's probably due to this auto update that stability of the Home Server console was perfect, unlike the ASUS box.

Speaking of the console, the HP tailored version is a gorgeous creation that walks even the most novice users through all of the functionality on offer. It really couldn't get any easier, even for usually tricky tasks such as setting up remote iPhone access to your files. Full DLNA and iTunes serving are both included, as is the popular TwonkyMedia. HP's automatic Media Collector will happily scan your network PCs for new media files while you're taking a nap, and the Video Converter software will then automatically convert them to a format that is most compatible with a wide range of devices. Backup options are the standard Home Server options, which are more than enough for the average home network.

The only issue with this box is its price. At around the same cost as the 4TB NAS boxes, but with only a quarter of the storage space, you pay a high premium for the convenience and power of the HP-tuned Home Server interface. However, if you've got money to spare, this offers a very simple yet powerful experience.



## NETGEAR Stora

www.netgear.com.au

- ✓ Easy to use; great remote access features.
- ✗ Small overall storage space.

### The Stora couldn't be simpler to use.

It's one of the smaller boxes that we tested, and has pleasingly simple lines that will be right at home in any cubic IKEA lounge room. Like the Thecus, this small size is mostly due to the fact that it's only got two drive bays, one of which is empty on arrival. The other bay includes a single Seagate Barracuda 7200.11 1TB drive — installing a second drive [highly recommended] automatically formats the two to RAID 1 to provide the redundancy.

As expected for such a novice-friendly drive, installation couldn't be simpler. Plug it in, install the small client software and away you go. However, unlike many of the NAS devices, which simply allowed us to click through to shared folders without logging in, the Stora always requires the user to log in. Don't forget your username and password unless you feel like resetting the entire unit.

Remote access to the box is handled by logging in to the **www.mystora.com** page, and cool additional features like mobile phone access are available from this page for a small annual subscription fee. Setting up the Stora for remote access couldn't be easier, unlike the cryptic instructions that shipped with several of its competitors. Even the biggest novice will have all of their media files accessible from anywhere in the world in a matter of minutes. Using the device's HiServ 2.0 media server, it's even possible to remotely stream certain file types from within your remote web browser, rather than having to download them first. iTunes and DLNA server are also ready out of the box and worked flawlessly. Backup options are relatively simple, while Mac users will appreciate the inclusion of Time Machine support.

It might not have the biggest storage space around, limited to 1TB even with two drives due to the forced RAID 1 implementation, but for those who want an easy, affordable NAS it comes highly recommended.



## Seagate NAS 440

www.seagate.com

- ✓ Excellent backup software; robust encryption; four bays
- ✗ Not competitively priced.

### A SOHO NAS that includes a few media specialties.

It might be pitched as a small business NAS device, but the NAS 440 straddles the divide between consumer and geek thanks to the inclusion of media-streaming features. And thanks to some rather high-end features, it's well suited to larger networks that need to do more than simply back up photos or stream shaky cam footage of Avatar. But they'll pay for the privilege.

With four drive bays, there's plenty of room to upgrade if you choose to, and it also opens up RAID 5 for a nice performance/safety mix. RAID 0, 1, and 10 are also supported. These drives are all hot swappable, and access to the bays couldn't be simpler.

Dual Gigabit Ethernet ports provide redundancy in the case of a single port failure, or the installation of a second NAS 440 purely for backup needs. Utilising a Marvell processor running at 1.2GHz, along with 256MB of onboard RAM, performance when navigating the proprietary Seagate interface was extremely responsive. Combine this with a gorgeous interface, and setting up the NAS 440 was one of the most pleasant experiences in the roundup.

Backing up is done via separate software, which arrives with ten keys out of the box. This software justifies the otherwise exorbitant price tag, as it's one of the most powerful backup solutions we've seen. Provided your network PCs don't all have massive hard drives, it's possible to do full system restores direct from the NAS 440 in the case of a full hard drive failure, OS and all. However, for the average home user who only needs to do basic media backups for a handful of PCs, this powerful suite of software is overkill. The extensive file encryption options included are likewise overkill for households, unless you've got some exceptionally weird home videos that you don't want hitting YouTube anytime soon.

## How to store the downloads



### Thecus N2200 4TB

www.thecus.com

- ✓ Excellent price per terabyte; small footprint.
- ✗ Sluggish interface.

**A Tardis of storage – this box has plenty of space inside.**

Unless you're already a NAS boffin, the name Thecus is probably Greek to you. A relatively new company founded in 2004, its sole focus is the creation of storage solutions, with a focus on networked devices. We were recently impressed by the budget baby N2204, so had high hopes for its bigger brother, the N2200.

This twin bay NAS won't win any awards for good looks, but it's got one of the smallest footprints for a 4TB device in our roundup. Installing new drives couldn't be easier, with a tool-less design allowing for quick hot swaps. As it only has two drive bays, the RAID options are limited to 0, 1 and JBOD. Even though it's actively cooled by a 60mm fan, there's very little noise pollution, even with both drives thrashing simultaneously. Four USB 2.0 ports provide plenty of room for external drives, but there's no eSATA support in sight.

For such a small box, it's quite surprising to see the amount of functionality squeezed inside. DLNA and iTunes serving are present, as are email alerts for hardware failure, USB print serving and UPnP. A nice touch is the support for various modes of scheduled downloads, including BitTorrent, HTTP and FTP. It can even be used as a standalone security box, able to record from two IP cameras (not included).

Using an AJAX interface, this is another NAS that shuns Windows Home Server in favour of a proprietary solution. Setting up via this interface is relatively easy, though enabling many of the more advanced features will require extensive reading of the 100-page manual. Unfortunately it's also not the most responsive interface, with regular pausing when updating options or changing tabs.

If you're not looking for the quickest speeds, the N2200 offers excellent value for money yet retains most of the features the average home user requires.



### WD ShareSpace 4TB

www.wdc.com

- ✓ Masses of storage space.
- ✗ Only accepts WD drives, limited feature set.

**This NAS offers decent bang for your buck.**

With a long history in storage, it's no surprise that WD offers one of the easiest-to-use NAS devices in our roundup. Thanks to its custom interface, getting this box to share files on your network is a breeze.

Like most of the devices in the roundup, this box shuns the Windows Home Server Console, instead utilising a custom WD-built interface called WD Discovery, accessed via your web browser. It's extremely responsive and well laid out, with the basic option perfect for those who just want to share files. Switching to advanced unveils a plethora of functions, which are still easy enough to understand for NAS noobs.

DLNA and iTunes serving are both included, as is remote access of files via WD's MioNet service. If a drive volume fails, the ShareSpace can automatically notify you via email, while WD's excellent automatic downloading interface allows you to grab files while you and your main PC are sleeping.

With four 1TB drives, the ShareSpace has plenty of room to spare. In our review sample, the drives were installed in a standard RAID 5 configuration, allowing for decent performance as well as data recovery. Unfortunately these drives can't be hot swapped, but at least they're easy enough to access. Because there are so many drives, a 90mm cooling fan is installed at the rear of the case. It's relatively quiet, but not totally silent like the passively cooled NAS devices.

Connectivity is lacking, with only two USB 2.0 ports on the rear, and another on the front. Backup functionality is also limited to only three PCs, as the included WD Anywhere software only has three licences.

If you're looking for enough storage space to keep a family's worth of memories in one box, the ShareSpace offers a very competitive price per gigabyte. However, this ageing box isn't getting any younger, and it misses out on some of the cool new tricks that other NAS devices offer.

# Best tech

APC's independent reviewers point to the best technologies in the top-selling product categories each month. We only change products when a better one comes along. What you see here is the best technology available on the market right now.



## Movers & shakers

The new USB

Now that motherboards with USB 3.0 ports are pouring on to the market thanks to ASUS and Gigabyte, we're going to see a similar emergence of USB 3.0 devices that will make use of the new

technology. Like Western Digital's MyBook 3.0, storage will be the first type of product to really benefit, with transfer speeds over 100MB/s in real-world usage.

LOOK  
OUT FOR  
THESE



Products marked with this stamp are the latest additions to Best Tech.

### NOTEWORTHY

#### GENERAL PC

TI Computers Deluxe 540



With Intel's new Core i3 540, 4GB of RAM and a GTX 260 graphics card, this machine ticks all the boxes for performance and value.



**\$1,380** - TI Computers - [ticomputers.com.au](http://ticomputers.com.au)

### BEST VALUE

HP Pavilion PC-090a

A smashing all rounder for the discerning user. This PC has a Core i7 860 and 8 gig of RAM. That's plenty of power for nearly everyone.



**\$2,699** - HP - [hp.com.au](http://hp.com.au)

### BEST PERFORMER

Altech NRG Storm i7

Not cheap, but with a Core i7 975 overclocked to 4.25GHz, this space shuttle booster will disorient you with the way it rips wait times to pieces.



**\$7,899** - Altech - [www.altech.com.au/nrg](http://www.altech.com.au/nrg)

#### PANEL PC

ASUS EeeTOP PC ET2203T

For a panel PC, ASUS have hit the nail on the head. Including Blu-ray, 1080 HD screen, SRS sound and touch optimised software.



**\$1,699** - ASUS - [asus.com.au](http://asus.com.au)

HP TouchSmart 300 & 600

HP's Touchsmart all-in-one, touchscreen PCs run Win 7 and are the closest thing to the iMac in the PC World. The 300 is the affordable one.



**\$1,699** - HP - [www.hp.com.au](http://www.hp.com.au)

Apple iMac 27in

A stunning computer gets even better as Apple release the 27in iMac, complete with LED 2.560 x 1,440 display, as well as Core i5 CPU.



**\$2,599** - Apple - [www.apple.com.au](http://www.apple.com.au)

#### NAS HOME

Linksys Media Hub NMH405

Automatically scans your network to find the multimedia files on attached systems, then copies or references them and plays them.



**\$700** - Cisco - [www.linksysbycisco.com](http://www.linksysbycisco.com)

Iomega Home Media Network

When nanna asks you what NAS she should buy, point her to this 1TB NAS designed to store and share images and multimedia across DLNA devices.



**\$429** - Iomega - [www.iomega.com.au](http://www.iomega.com.au)

My Book World Edition II

The ultimate backup and media storage for PC/Mac. Up to 4TB with mirrored RAID 1 drives and media streamer and iTunes server.



**\$999.99** - WD - [www.westerndigital.com](http://www.westerndigital.com)

## EXTERNAL DRIVE

### NOTEWORTHY

#### omega eGO Triple Interface Drive

Stunning portable 320GB and 500GB drive, with a suite of software and FireWire 800 and 400 ports as well as USB 2.0.



\$179 (320GB) - Iomega - [iomega.com.au](http://iomega.com.au)

### BEST VALUE

#### Toshiba 640GB USB 2.0

This 640GB USB 2.0 Portable External Hard Drives comes with system backup (Windows only), password protection for added security and enhanced software features.



\$199 (640GB) - Toshiba - [toshiba.com.au](http://toshiba.com.au)

### BEST PERFORMER

#### WD MyBook 3.0

This 1TB external hard disk drive sports the latest 3.0 speeds. It even comes with a USB 3.0 PCI card in the box. It's triple the speed of last generations drives too.



\$249 (1TB) - Western Digital - [wd.com](http://wd.com)

## NETBOOK

#### HP Mini by Studio Tord Boontje

Though the internals are quite run of the mill, you'll stand out with the unique layered image finish on this high style netbook.



\$799 HP - [hp.com.au](http://hp.com.au)

#### Toshiba NB200

It's not the best looking netbook out there, but with a set of full size keys, light weight and 1,024 x 600 and outstanding battery life, you won't be left wanting.



\$749 - Toshiba - [toshiba.com.au](http://toshiba.com.au)

#### HP Mini 210

Even though it's got a low price tag, the performance and design of this model mean it's right at the top of the list. Six hours battery isn't bad either!



\$449 HP - [hp.com.au](http://hp.com.au)

## NOTEBOOK ALL-ROUNDER

#### Toshiba A500

Big brand, great-value entertainment notebook with a 16in screen, powerful graphics, HDMI connection and built-in TV tuner.



\$1,599 Toshiba - [www.toshiba.com.au](http://www.toshiba.com.au)

#### HP dv2-1001AU

A fantastic offering, melding the price and convenience of a netbook with the powerful hardware and comfort of a fully-fledged notebook.



\$1,199 HP - [www.hp.com.au](http://www.hp.com.au)

#### Samsung X460

Thin and light, but with a 2.66GHz Intel Core 2 Duo P9600 processor, 4GB of DDR3 1066MHz RAM, and NVIDIA GeForce 9200M GS graphics.



\$2,999 Samsung - [www.samsung.com.au](http://www.samsung.com.au)

## DESKTOP REPLACEMENT

#### Pioneer DreamBook M571

Obscurely powerful notebook, with an Intel Core 2 Quad QX9300 Extreme processor running at 2.53GHz and 4GB of 1,066MHz DDR3.



\$4,169 Pioneer - [pioneercomputers.com.au](http://pioneercomputers.com.au)

#### Dell Studio XPS16

With one of the best screens we've seen on a notebook, as much customisation as you want and a great design, it's a winner.



\$1,789 Dell - [www.dell.com.au](http://www.dell.com.au)

#### Toshiba Qosmio X500

Weighing in at 4.6kg, with a monstrous 18.4in display, the X500 offers great multimedia, a Core i7 CPU and a gamers graphics card.



\$2,699 Toshiba - [www.toshiba.com.au](http://www.toshiba.com.au)

## PHONE CONSUMER

#### Sony Ericsson AINO

A super duper phone, capable of streaming media from your PS3 and DLNA network devices over 3G or Wi-Fi. Also comes with a Bluetooth dongle.



\$849 - Sony Ericsson - [sonyericsson.com.au](http://sonyericsson.com.au)

#### Nokia 6760 Slide

This side mounted slide out keyboard model is packed with social networking tools, and access to the Nokia Dvi store will keep you busy.



\$479 - Three - [Three.com.au](http://Three.com.au)

#### iPhone 3GS

Glorious UI, 3G speed, and now faster, slicker graphics, can shoot video and take better photos. The App store is a killer too.



Plan Apple - [www.apple.com.au](http://www.apple.com.au)

## PHONE BUSINESS

#### HTC Touch Pro2

Even though it's cursed with Windows Mobile 6.5, it's a wonder to behold. The best keyboard on the mobile market mixed with excellent apps.



\$1,399 Telstra - [Telstra.com.au](http://Telstra.com.au)

#### Nokia E75

Works like a BlackBerry with the new Nokia Messaging push email service. You can configure up to 10 Gmail, Yahoo Mail, Live Mail and other free and hosted email accounts.



\$979 Nokia - [www.nokia.com.au](http://www.nokia.com.au)

#### BlackBerry Bold 9700

The new BlackBerry flagship, a tad smaller than the 9600 but with a higher-res screen. Also runs on the regional HSDPA networks of Vodafone and Optus, and Telstra's NextG.



Plan RIM - [www.blackberry.com](http://www.blackberry.com)



## MEDIA PLAYER

### NOTEWORTHY

#### Apple iPod nano

A new long narrow design with an accelerometer that kicks the nano into landscape mode when you hold it sideways. Now in 8GB and 16GB models.



**\$199 (8GB) - Apple** [www.apple.com.au](http://www.apple.com.au)

### BEST VALUE

#### Sony Walkman X

This may be sacrilegious, but we think Sony's new Walkman X is better than the top iPod, with a 3.2in OLED touchscreen, noise-cancelling tech and Wi-Fi.



**\$649 (16GB) - Sony** [www.sony.com.au](http://www.sony.com.au)

### BEST PERFORMER

#### Archos Si

A tour de force — the most stunning media player yet, plays HD content and has in-built GPS, all running on Android. In 8GB to 500GB versions.



**\$445 (8GB) - Archos** [hechinternational.com](http://hechinternational.com)

## MP3 DOCKS

#### Altec Lansing octiv AIR M812

Unlike most other iPod docks, the dock and speaker connect to each other wirelessly up to 30m away. Produces a warm, well-balanced sound.



**\$799 - Altec Lansing** [www.alteclansing.com](http://www.alteclansing.com)

#### TDK NX-D4CD remote & Mic

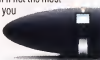
Audio performance blows similarly priced docks out of the water, and looks great. But it can also play music off USB drives and SD cards.



**\$300 - TDK** [www.tdk-media.com](http://www.tdk-media.com)

#### B & W Zeppelin

Simply the best-quality iPod dock speaker system around, even if not the most expensive. So good you need 320Kbit/s tracks to get the most out of it.



**\$1,300 - Bower-Wilkins** [www.bower-wilkins.com](http://www.bower-wilkins.com)

## GPS

#### TomTom XL340

A great beginner GPS. This model has a huge screen, visible in the day with an easy to use interface and clear, loud speaker.



**\$399 - TomTom** [tomtom.com](http://tomtom.com)

#### Uniden TRAX 5000

We love Uniden because of its philosophy of delivering on the fundamentals — bigger screens, easier navigation, better 3D maps.



**\$349.95 - Uniden** [www.uniden.com.au](http://www.uniden.com.au)

#### TomTom GO 930

The top-of-the-line TomTom delivers traffic messaging, intelligent live routing, FM transmitter, voice-recognition and text-to-speech.



**\$849 - TomTom** [www.tomtom.com.au](http://www.tomtom.com.au)

## COMPACT CAMERAS

#### Ricoh CX2

The CX2 is even better than the CX1. Also with a DSLR-style CMOS sensor, the CX2 is one of our favourite compacts of all time.



**\$599 - Ricoh** [www.ricoh.com.au](http://www.ricoh.com.au)

#### Kodak M320 Easyshare

The M320 is cheap, easy to use and produces great images. Takes a picture as well as a camera twice its price.



**\$180 - Kodak** [www.kodak.com.au](http://www.kodak.com.au)

#### Ricoh GXR

Lens, image sensor and image processing engine are one block, meaning the lens are tuned to the announced.

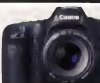


**TBA - Ricoh** [www.ricoh.com.au](http://www.ricoh.com.au)

## DSLR CAMERAS

#### Canon EOS 5D

Though the price tag is heart stopping, the 5D is one of the best cameras out there, bar none.



**\$4,799 + lens - Canon** [www.canon.com.au](http://www.canon.com.au)

#### Canon EOS 550D

Easy to use, the 550D offers HD video and heaps of features, including the best LCD screen on the market.



**TBA - Canon** [www.canon.com.au](http://www.canon.com.au)

#### Nikon D90

This is just sexy! The first DSLR with HD video, the D90 is the best non-professional camera you could get without sending yourself broke.



**\$1,699 - Nikon** [www.nikon.com.au](http://www.nikon.com.au)

## HD CAMCORDER

#### Sony VPC FH1 Xacti

With a super small design, oodles of connectivity and some seriously good image quality, this camera is a winner.



**\$799 - Sony** [sony.com.au](http://sony.com.au)

#### Sony HDR-TGSVE

For something so small, this captures stunning Full HD at the maximum 1,920 x 1,080 res. Its slim body is not only lightweight and looks uber cool, it also houses a GPS receiver.



**\$1,499 - Sony** [sony.com.au](http://sony.com.au)

#### Sony HDR-XR520V

Want the best consumer camcorder out there? With 240GB HDD storage capacity, 12MP still images and so much more.



**\$1,699 - Sony** [www.sony.com.au](http://www.sony.com.au)

## PHOTO FRAMES

### NOTEWORTHY

#### D-Link DSM-210

25cm Wi-Fi photo frame that streams net content and can accept content via a "widge" located on the PC desktop.



\$499 - D-Link [www.dlink.com.au](http://www.dlink.com.au)

### BEST VALUE

#### Kodak P720 Touch Digital

Kodak's entry-level photo frame, with a good quality 7in screen and the excellent Quick Touch Border which makes it really easy to navigate menus.



\$140 - Kodak [www.kodak.com](http://www.kodak.com)

### BEST PERFORMER

#### Samsung SPF-105V

Almost like a mini-TV with an impressive monitor and able to play MP3s and video files, plus lots of slideshow effects.



\$399 - Samsung [www.samsung.com.au](http://www.samsung.com.au)

## HDTV

#### LG PS70

Features in-built "Time Machine" DVR recording. For this model, the PS70, just add a hard disk.



\$3,299 for 50in LG [www.au.lge.com](http://www.au.lge.com)

#### Panasonic VIERA G15 Neo

This represents the new state-of-the-art in plasmas, with brighter LCD-like pictures and faster motion image response.



\$3,299 - Panasonic [www.panasonic.com](http://www.panasonic.com)

#### Panasonic Z Series

A super thin plasma that's lighter than others, with Full HD wireless transmission. This series sports all the bells and whistles.



\$5,999 - Panasonic [panasonic.com.au](http://panasonic.com.au)

## TV TUNER

#### Hauppage MiniStick-HD

The size of a small USB key, it's the smallest Freeview-tuned digital TV stick in Australia — great quality, cheap, and perfect for notebooks.



\$69 - Hauppage [www.newmagic.com.au](http://www.newmagic.com.au)

#### Kworld DVB-T 395UR

A basic HD tuner card that allows you to watch HD digital TV on your PC or notebook. It's not flash, but it works well, is portable and convenient.



\$79 - Kworld [www.kworld.com.tw](http://www.kworld.com.tw)

#### AverTV TwinStar PCI-E

This is the best HD tuner on the market. Twin d'igital tuners for simultaneous record/playback, solid software and MCE compatible drivers.



\$159 - Altech [altech.com.au](http://altech.com.au)

## DISC PLAYERS

#### Sony PlayStation 3 80GB

Yes, it's a games console, but it also doubles as a Blu-ray player that's as good as any standalone devices on the market. It's the same price as some of the better ones, so do your sums.



\$699 - Sony [www.sony.com.au](http://www.sony.com.au)

#### Kogan Blu-ray Player

Basic, affordable. Plays back good quality HD and upscales DVDs. Now supports BD-Live (Profile 2.0) which it can receive internet content and firmware upgrades. Good buy at \$249.



\$249 - Kogan [www.kogan.com.au](http://www.kogan.com.au)

#### Sony BDPS350

Superb HD playback quality and does great upscaling of DVDs to high definition. Unlike the \$1,799 Pioneer, available for around \$400 on the street.



\$400 - Sony [Sony.com.au](http://Sony.com.au)

## DVR

#### FOXTEL iQ2

If you watch pay TV, the FOXTEL iQ2 is a must. Records both standard and high-definition free-to-air TV to a spacious 320GB hard drive.



\$10 month - FOXTEL [www.foxtel.com.au](http://www.foxtel.com.au)

#### Dvico TiViX M6600-N

There's little this won't do with dual HDTV tuners, 1TB internal storage, network playback, full 1080p as well as HDMI 1.3a support.



\$699 - Dvico [Dvico.com](http://Dvico.com)

#### Panasonic DMR-BW850

This 2nd-gen Blu-ray recorder is a tempting all-in-one option for any lounge room. Includes 240 hours of HD recordings onto the hefty 500GB hard drive.



\$2,199 - Panasonic [www.panasonic.com.au](http://www.panasonic.com.au)

## ROUTER

#### Netgear Rangemax

A dual-band gigabit router built specifically with a huge list of features, including a separable Guest network for visitors, and a media server.



\$299 - Netgear [netgear.com.au](http://netgear.com.au)

#### TP-Link TL WR941ND Wireless N

A Draft 2.0 N router with MIMO, using three adjustable antennas for speeds of up to 200Mbit/s. Performance is decent and the documentation is good.



\$129 - TP-Link [www.anyware.com.au](http://www.anyware.com.au)

#### Linksys Dual-N WRT610N

It does dual-band Wireless N (5GHz and 2.4GHz), is one of the best performers in testing and looks great. Comes with Linksys' superb LELA network setup wizard.



\$290 - Linksys [linksys.com.au](http://linksys.com.au)

# 70 masterbuilder

HOW TO BUILD THE ULTIMATE PC



One of the joys of computing is building your own PC. Each month a Master Builder will configure a PC for a specific task and pricepoint, recommending the best components for the job.

## Build a Core i3-based home theatre PC

With the launch of the H55 chipset and Core i3 processors, Intel has given Microsoft's Media Center users one of the best HTPC platforms yet.

David Kong of Enspire Digital is one of the few professional system builders who makes a distinct line of media centre PCs, so we've asked him to build for us a Core i3-based media centre PC. The combination of H55 chipset and CPU gives the perfect blend of performance, low power

consumption and hardware acceleration for decoding the latest media file formats. There's also support for bitstreaming the latest Dolby Digital True HD and DTS-HD MA soundtracks from Blu Ray discs if you have a supporting AV receiver.

### CORE SYSTEM

SYSTEM COST  
**\$1,047**

#### CPU

Intel Core i3 530 2.93GHz — **\$168**

The Intel Core i3 is the first processor from Intel with integrated graphics. Like the Core i5 and Core i7 it has an integrated memory controller, but is only dual-core in design. With HyperThreading support included, you've got plenty of processing power to play videos and music using even the most demanding codecs.

#### CPU COOLER

Aygun V6 LP — **\$32**

The design of our chosen case means we need a low profile cooler in our system. Whilst we could just settle for the Intel stock cooler, going with

the Aygun keeps the maximum noise level quite low. This fan has a rubber-mounted 92mm fan and a fan speed adjuster to control the fan speed.

#### MOTHERBOARD

Gigabyte H55-USB3 — **\$172**

This Gigabyte motherboard has one of the new boards sporting USB 3.0 ports. It has a full complement of video connections including HDMI, DVI and DisplayPort along with optical S/PDIF output, 6 channel analogue and even FireWire. Whew!

#### MEMORY

Patriot Signature Line 133MHz 4GB kit — **\$138**

Simple, reliable and not pricey or flashy. Just what we want in RAM.

#### GRAPHICS

Intel HD Graphics — **\$0**

The latest Intel Core i3 processors actually integrate the graphics processing unit inside the CPU. This means lower power consumption

and less heat. All good things for a media centre. The graphics capabilities aren't exactly mind-blowing for 3D but are perfect for our media centre, with support for MPEG-2, H.264 and VC1 hardware decoding.

#### SOUND CARD

Onboard — **\$0**

Adding a sound card for a media center is pretty pointless unless you'll be connecting it using analogue outputs. Otherwise for digital connections, the onboard will be fine. Our chosen Gigabyte motherboard has a Realtek HD audio chipset, which offers a mature driver and decent options for configuring it to suit your tastes. As a bonus the onboard HDMI audio also supports bitstreaming the latest Blu-ray soundtracks.

#### HARD DRIVE

Western Digital 1TB WD10EARS — **\$138**

Storage, storage and more storage. A media centre can never have enough storage space. It's amazing how quickly a 1TB drive can be

Enspire Digital's David Kong reveals how to spec up the optimal media centre PC.



filled with music, photos, DVDs and recorded TV. The WD10EARS is the latest 1TB drive from Western Digital, and is one of the first to use its advanced format technology. In a nutshell, advanced format technology replaces the normal 512B sector size with 4K sectors, which gives more usable space on a hard drive. If you have two drives you can dedicate one drive to recording TV shows and leave the first drive for music, photos and DVDs.

#### **OPTICAL DRIVE**

**Samsung 8x Blu-ray/DVD Burner — \$151**

With the growing availability of Blu-ray, it makes sense to include a Blu-ray drive in our perfect media centre. One less component in our living room! As an added advantage, our media centre loads discs faster than any standalone player and is easily upgradeable to the latest BD-Profile. Throw in the ability to make the drive region-free and it's really hard to fault our media centre as a Blu-ray player.

#### **POWER SUPPLY**

**Seasonic 430W — \$103**

Quiet and very efficient, the Seasonic M12 430W ticks all the right boxes needed for a media centre.

#### **CASE**

**Silverstone GD04 — \$145**

It's hard to make a black box sexy, so we'll go for a case that's small, functional and quiet. The Silverstone has 3 quiet 120mm fans, room for 2 hard drives that are rubber mounted, and it is very shallow, which means it will fit into most entertainment cabinets without trouble.

#### **TV TUNER**

**Hauppauge HVR-2200 — \$199**

This is one of the best tuners on the market at the moment, giving you 2 digital or 2 analogue tuners and an FM tuner as well, which is finally supported under Windows 7.

## **EXTRAS**

### **KEYBOARD/MOUSE**

**Visenta V1 — \$105**

For setting up the media centre, and those times when you want to surf the net on your TV, a wireless keyboard and mouse is indispensable. The Visenta comes with a multi-touch touchpad, which makes scrolling and clicking really simple. Together with a decent range, it's one of the best media centre keyboards we've used.

### **REMOTE CONTROL**

**Hauppauge MCE Remote Control Kit — \$61**

To make our media centre user friendly, we need a good remote control. The Hauppauge unit is one of the better ones out there. It has a good IR receiver and has a good shape.

### **OPERATING SYSTEM**

**Windows 7 Home Premium 32-bit — \$143**

Microsoft have further refined Media Center in Windows 7 and now offer several improvements over Vista's version. Most significant is the support for the DVB-T broadcast guide and support for 4 digital tuners without having to resort to registry hacks. We've stuck with 32-bit even though we have 4GB RAM because of problems with codecs in the 64-bit version. Although there are fixes and workarounds it's just not worth the effort at the moment.

**Total with extras: \$1,555**





# masterbuilder

HOW TO BUILD THE ULTIMATE PC



master builder competition — powered by ASUS

## Master Builder semi-finalists

Entries for our Master Builder competition have now closed and we have picked the semi-finalists.

Our mission to find Australia's first Master Builder has now entered the next phase. We have picked 36 outstanding builds from the hundreds of competition entries received. Their owners will now battle it out in the semi-finals, with a special challenge set by APC and our sponsor, ASUS.

The outstanding builds received in our competition covered a variety of PCs, from all-rounders and gaming PCs to media centres and video-editing machines. They revealed a strong understanding of the PC building art — and also some clever solutions that created some great value/performance machines.

### SEMI-FINALISTS

The semi-finalists will now be given a special challenge, with the top four builders going to the finals which will be held in the APC Labs. The challenge is:

**"Define an Extreme All-rounder PC that is outstanding at these three things: gaming, video editing/encoding, and media centre tasks."**

The motherboard and graphics card in the PC's configuration must both be made by ASUS — the sponsor of this competition. You don't have to build the PC, but you must define it on paper.

A warning: this is not as simple as it sounds — an all-rounder would be good at all three, but not excel in all. The judges are asking for one that is great at all of them.

The four finalists will receive ASUS hardware and a copy of Bioshock 2.

For more details head to: [apcmag.com/masterbuilder.htm](http://apcmag.com/masterbuilder.htm).

### THE FINALISTS

- Adrian Rundle** Media PC
- Andrew Carr** All-rounder PC
- Barton IP** All-rounder PC
- Bradley Wilson** Gaming and video-editing PC
- Braycen Jackwitz** Internet PC
- Chris Hutcheon** All-rounder PC
- Christopher Lampard** Gaming-focused all-rounder PC
- Colin Bloomfield** Experimental PC
- Damien Pedler** Home theatre PC
- Daniel De Vries** Affordable gaming system PC
- Daniel Valastro** Mid-range gaming PC
- Darren Gatt** Budget all-rounder PC
- David Pierson** Multimedia and gaming PC
- Donald Connor** High performance on a budget PC
- Dushan Karovich-Wynne** Powerful all-rounder/casual gaming PC
- Ho-Kyung Lee (Benjamin)** Ultra-affordable
- Ian Reschke** Gaming PC
- James Moffat** Gaming PC
- Jason Campbell** Media centre PC
- John Cox** Video-editing PC
- Justin Goldsworthy** Ultra-affordable all-rounder PC
- Karen Conneely & Robert Halas** Network Attached Storage PC
- Karl Slate** Best bang-for-buck gaming PC
- Kye Nelson** Gaming/extremely fast MSN'ing PC
- Leith Magon** Home theatre PC
- Luke Monaghan** Movie & music appliance PC
- Mark Roper** All-rounder PC
- Matt Callaghan** Budget gaming PC
- Matt Witherow** All-rounder PC
- Mick Brown** Windows Home Server PC
- Rod Petch** The ultimate all-rounder PC
- Samuel Reynolds** Budget gaming PC
- Scott Weaver** Gaming/Photoshop PC
- Simon Ware** Extreme on a small budget PC
- Sunny Yeung** Gaming PC and media centre PC

You can see all the builds at [apcmag.com/masterbuilder](http://apcmag.com/masterbuilder)



# MASTER BUILDER'S LIVE BUILDS

APC puts part of its famed Labs online with our new "Live Builds" project.

To celebrate the art of PC building that has inspired our readers in the Master Builder competition, APC has launched an exciting new service called "Live Builds" at [apcmag.com/masterbuilder](http://apcmag.com/masterbuilder). These are six PC configurations that are maintained and updated around the clock by APC's technical editor, Nick Race, who will use his knowledge of the PC and components industry and the opinion of our reviewers to ensure the builds carry best-in-class components.

The configurations are for PCs in these categories: value PC, budget gaming PC, all-

rounder PC, premium gaming PC, extreme (God Box) PC, and media centre PC.

When a new component is released that APC believes will improve the performance or value/performance equation of one of the PCs, we'll swap it into the configuration and then measure the impact on the system's overall performance. You'll also be able to see a log of all the changes to the PC over time and how these have improved its value and performance.

Most of all, we want your opinion. If you feel there's a better component for

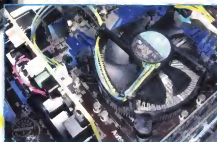
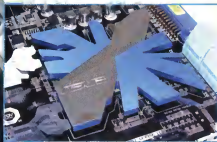
one of Nick's Live Builds, you can suggest it in the comments under each build, and if we're convinced you have a case, we'll add it to the Live Build and measure its impact on the benchmarks.

APC's Master Builder section will also carry PC configurations from our professional master builders published in APC magazine, as well as all the entries from our Master Builder Competition.

Find Live Builds online, at [apcmag.com/masterbuilder.htm](http://apcmag.com/masterbuilder.htm).

If it's a great piece of tech you're after, chances are you'll find it in one of our Live Builds.

Know how different components work together before you shell out your own hard-earned.



## ASUS MASTER CHALLENGE 2

# BUILD A GAMING PC

Check out the PC which won our first ASUS Master challenge, at [apcmag.com/masterbuilder](http://apcmag.com/masterbuilder). Then tell us if you can build one as good, if not better, with the components selected by ASUS.

The entry must include one motherboard and one graphics card from the list below. You don't have to physically build the PC, just define it on paper. Try to pick other components that complement the characteristics of the particular motherboard and graphics card and explain why your creation should win. The winner will get an ASUS Republic of Gamers Maximus III GENE motherboard.

Go to [apcmag.com/masterbuilder](http://apcmag.com/masterbuilder) for the entry form.

**MAKE SURE YOUR ENTRY INCLUDES BOTH A MOTHERBOARD AND A GRAPHICS CARD FROM THOSE LISTED BELOW.**

### ASUS MOTHERBOARDS



P6X58D  
PREMIUM



MAXIMUS III  
EXTREME



P7P55D-EX  
DELUXE

### ASUS GRAPHICS CARDS



EAH5850  
DIRECTCU TOP



EAH5870 TOP



5970  
WITH VOLTAGE TWEAK

## ASUS MASTER CHALLENGE WINNERS!

APC and ASUS judges have selected the winner of the inaugural ASUS Master Challenge. Contestants had to build a Gaming PC around some motherboards and graphics cards selected by ASUS. The winner is Alistair Roe, of Brisbane, whose PC impressed the judges for its perfect blend of components.

Matthew Wu, from ASUS Australia says: "ASUS congratulates Alistair for creating a perfect machine using the ASUS Republic of Gamers Maximus III GENE mATX motherboard and the ASUS EAH5870 graphics card as a baseline. The combination of the powerful Lynnfield CPU with high-bandwidth memory and very good CPU cooler, will allow the user to achieve a really nice overclock to add to the gaming experience. The monitor is perfect for the high performance that the ASUS EAH5870 delivers and adding another 2. Monitors will allow Alistair to experience AMD's Eyefinity. The power supply and case will provide the performance and space for an extra ASUS EAH5870 added onto the Maximus III GENE in the future if more performance is needed. This is a perfect portable LAN gaming machine that everyone will be envious of."

Alistair wins an ASUS P7P55D, a motherboard ideal for building your first Core i5 or Core i7 PC, which makes use of the LGA1156 socket.

### HONORABLE MENTIONS

Lucas Cooper

Mike Titchen

Warren Chisholm

Ian Reschke

Ryan Tang

Brad Mazzer

Sam Perrin

Trevor Munn

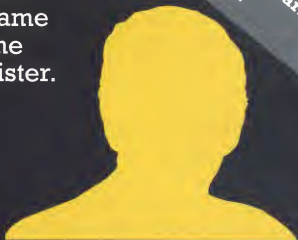
Peter Read

To view Alistair's build, together with those of the entrants receiving an honourable mention, go to [apcmag.com/masterbuilder](http://apcmag.com/masterbuilder)



Since  
Australia II  
won the  
America's  
Cup...

Since  
Bob  
Hawke  
became  
Prime  
Minister.



Free CFD & FX seminars.  
Register now.

Since the float of the  
Australian dollar...



Our financial strength and stability have  
been forged in volatile markets **since 1983.**

- ✓ Transparent pricing
- ✓ 24/7 secure internet access
- ✓ Guaranteed Stop Loss
- ✓ "Best Online CFD Platform"\*
- ✓ **Australia's fastest growing CFD Provider^**

1800 354 182  
[www.cityindex.com.au](http://www.cityindex.com.au)  
CFD & FX TRADING

**CITYINDEX**  
THE NEXT WAY TO TRADE

City Index Limited (ABN 33 072 653 468) is the holder of AFSL 336957. A Product Disclosure Statement (PDS) is available from our website [cityindex.com.au](http://cityindex.com.au). You should read and consider the PDS before making any decision to deal in City Index products, which are derivatives. Derivatives can be highly leveraged; they can carry a high level of risk and are not suitable for all investors. \*Money AM Awards, UK 2008 - Winner, Best Online CFD Platform. ^Investment Trends 2009 CFD Report shows that City Index has the fastest growth in market share in Australia, excluding very small providers with less than 4% total market share.

# Best builds

APC writer and reviewer **Bennett Ring** recommends the best components for three PC builds.

## BENNETT RING

Bennett has been overclocking since the Duron days and began his career as a tech reviewer last century.



	NEW HOME SERVER \$1,933	NEW ULTRA-SILENT PC \$2,483	GAMING PC \$5,086
<b>CPU</b>	With two cores it'll handle multiple requests with aplomb, but doesn't have a ridiculously fast clock speed that won't be utilised. <b>\$165</b> 1 Intel - <a href="http://www.intel.com.au">www.intel.com.au</a>	It's the same CPU as our server, but we're choosing it for the silent PC for the relatively low thermal output of only 73W. <b>\$165</b> 1 Intel - <a href="http://www.intel.com.au">www.intel.com.au</a>	The Core i7 860 offers excellent gaming performance, without breaking the bank. A superb overclocker for the adventurous. <b>\$370</b> 1 Intel - <a href="http://www.intel.com.au">www.intel.com.au</a>
<b>COOLER</b>	There's no need for custom cooling in your server, as this CPU is relatively cool, making the stock HSF nice and quiet. <b>\$0</b> 1 Intel - <a href="http://www.intel.com.au">www.intel.com.au</a>	Zalman CNPS9900ALED Copper It's not passive, but you don't want a passive cooler on today's mid-range CPUs. Besides, it's so quiet that we swear you won't hear it. <b>\$90</b> 1 Zalman - <a href="http://www.zalman.co.kr">www.zalman.co.kr</a>	Zalman CNPS10X Extreme While it's a little tricky to mount, it'll cool the 860 at a much quieter volume than the stock Intel cooler, and can handle increased voltages. <b>\$90</b> 1 Zalman - <a href="http://www.zalman.co.kr">www.zalman.co.kr</a>
<b>MOBO</b>	With seven SATA II ports all your hard drive upgrade needs will be taken care of for years to come. It'll also remove the need for a GPU. <b>\$149</b> 1 MSI - <a href="http://www.msi.co.tw">www.msi.co.tw</a>	Gigabyte GA-P55-UD3 Motherboard fan noise will be a thing of the past with the passive cooling on this excellent mid-range board. <b>\$149</b> 1 Gigabyte - <a href="http://www.gigabyte.com.au">www.gigabyte.com.au</a>	Gigabyte GA-P55-UD4 This affordable motherboard offers CrossFire support for two ATX cards, and is a very easy board for overclocking your i7 chip. <b>\$189</b> 1 Gigabyte - <a href="http://www.gigabyte.com.au">www.gigabyte.com.au</a>
<b>RAM</b>	2GB is plenty of memory for basic server duties, and keeping to a single stick ensures minimal stability issues. <b>\$99</b> 1 Apacer - <a href="http://www.apacer.com">www.apacer.com</a>	2 x Geil 4GB Ultra DDR3 2133MHz kits It may not have the tightest memory timings, but there's no denying that the overall speed is extremely high. The bargain price doesn't hurt. <b>\$270</b> 1 Geil - <a href="http://www.geil.com.tw">www.geil.com.tw</a>	2 x Geil 4GB Ultra DDR3 2,133MHz kits One of the cheapest DDR3 packs available, giving this machine 8GB of very fast memory at a reasonable price. <b>\$270</b> 1 Geil - <a href="http://www.geil.com.tw">www.geil.com.tw</a>
<b>GRAPHICS</b>	Our motherboard supports pass-through graphics from the i3. <b>N/A</b> 1 MSI - <a href="http://www.msi.co.tw">www.msi.co.tw</a>	PowerColor ATI HD 5750 Great performance for a passively cooled card, the 5750 can handle most non-gaming related duties with ease. <b>\$159</b> 1 ATI - <a href="http://www.ati.com">www.ati.com</a>	2 x Sapphire ATI HD 5870 The 5870 is the fastest single GPU solution on the market, so installing two guarantees insane frame rates at high res. <b>\$1,040</b> 1 Sapphire - <a href="http://www.sapphiretech.com">www.sapphiretech.com</a>

## HOME SERVER

### 4x Western Digital Caviar Green 2TB

Surprisingly, this is one of the most expensive components in the entire PC. We could have gone cheaper, but you'd run out of room in no time.



HDD1

HDD2

1

Western Digital > [westerndigital.com](http://westerndigital.com)

\$1,000

N/A

Four 2TB hard drives are enough!



N/A

1

### BenQ DW240S 24x Speed Internal DVD+-R

We could have bought a simpler DVD-ROM drive for five dollars less, but it wouldn't have been able to burn discs.



BenQ > [www.benq.com](http://www.benq.com)

\$40

### 1,000W Antec CP-1000W ATX PSU

All those drives require plenty of juice, especially if you install more down the track.



Antec > [www.antec.com](http://www.antec.com)

\$230

### Antec Twelve Hundred

Twelve drive bays should keep you going into the next decade, while the extra ventilation will keep everything cool.



Antec > [www.antec.com](http://www.antec.com)

\$250

N/A

Log in to your server via your networked PCs and you won't need to use a monitor.



N/A

1

N/A

Log in to your server via your networked PCs and you won't need to use a keyboard.



N/A

1

N/A

Log in to your server via your networked PCs and you won't need to use a mouse.



N/A

1

## ULTRA-SILENT PC

### 2x Corsair P128 128GB SSD

I use this drive in my home PC. It's totally silent, but more importantly, has been utterly reliable compared to many flakey SSDs.



Corsair > [www.corsair.com](http://www.corsair.com)

\$680

N/A

You can't afford a second drive after buying 2x SSDs. Move along.



N/A

### BenQ DW240S 24x Speed Internal DVD+-R

We could have bought a simpler DVD-ROM drive for five dollars less, but it wouldn't have been able to burn discs.



BenQ > [www.benq.com](http://www.benq.com)

\$40

### Zalman ZM660-XT

With heatpipe cooling, this PSU will be quieter than the sound of a BSD... provided it's not caused by a Soundblaster product.



Zalman > [www.zalman.com](http://www.zalman.com)

\$190

### Antec Atlas Black Server case

The bigger the case, the less of a problem heat will be, and the fewer noisy fans you'll need. Hence our whopping big server case.



Antec > [www.antec.com](http://www.antec.com)

\$230

### Acer 23in X233HB

This 23in beast runs at full 1080p resolution yet won't cost you the Earth.



Acer > [www.acer.com](http://www.acer.com)

\$250

### Microsoft Wireless Optical Desktop 1000

With no wires between the mouse/keyboard and PC, you won't have to hear those blasted cables scratching against your desk.



Microsoft > [www.microsoft.com](http://www.microsoft.com)

\$60

### Mouse included with keyboard

Our keyboard kit includes a mouse.



Microsoft > [www.microsoft.com](http://www.microsoft.com)

N/A

## GAMING PC

### Corsair P128 128GB SSD

One of the new generation of SSDs, this Corsair drive sheds the problems of the past, yet remains affordable.



Corsair > [www.corsair.com](http://www.corsair.com)

\$440

### Western Digital Caviar Black SATAIII 1TB

This behemoth will provide ample storage room, while the large 32MB cache and 7,200rpm ensure decent load times.



Western Digital > [www.westerndigital.com](http://www.westerndigital.com)

\$150

### Pioneer DVR-118L 22X DVD burner

Cheap but not nasty, this burner will install your games quick smart and back up your massive game file library in no time.



Pioneer > [www.pioneer.com.au](http://www.pioneer.com.au)

\$50

### 1,000W Antec TPQ-1000W

With two video cards and an overclocked CPU, the reliable 1,000W from this PSU is a must.



Antec > [www.antec.com](http://www.antec.com)

\$280

### Antec Twelve Hundred

It's big enough for your CrossFire Setup, and the window on the side will show it off to the world.



Antec > [www.antec.com](http://www.antec.com)

\$250

### Samsung 30in 305T

A 6ms response time ensures snappy image playback, and the massive 30in slab will make the most of your CrossFire setup.



Samsung > [www.samsung.com.au](http://www.samsung.com.au)

\$1,600

### Logitech G19 Gaming Keyboard

With a colour LCD screen showing game info, and customisable key backlighting, this is the gamer's weapon of choice.



Logitech > [www.logitech.com.au](http://www.logitech.com.au)

\$249

### Logitech G500

A 2700dpi resolution and 30G acceleration limit ensure every shot will count.



Logitech > [www.logitech.com.au](http://www.logitech.com.au)

\$109



# COMPUTER FORENSICS USB DRIVE

Criminals beware! We build the ultimate evidence-gathering toolkit.

It's not widely known that Microsoft produces something called The Computer Online Forensic Evidence Extractor (or COFEE for short) and has made it available to police forces since at least 2007. It's designed to gather forensic evidence at crime scenes and during raids from the still-running PCs of suspects and victims.

Microsoft's COFEE reportedly takes the average police officer about 10 minutes to master, and comes supplied on a bootable USB pen drive. It enables trained officers to gather

evidence from a running system without the need to call in cybercrime specialists, thereby speeding up investigations.

The USB drive itself is said to contain a package of about 150 forensic programs that enable an investigator to record sensitive information like internet history files and complete practical tasks like deleting Windows passwords. It also enables them to upload the recorded data for further analysis. By April 2008, it was reportedly in use by over 2,000 law enforcement officers throughout 15 countries.

During November 2009, it was announced that someone had leaked Microsoft's secret crime-fighting software online. Hackers and cybercriminals had been dying to get their hands on it. Now it's reportedly available to anyone brave enough to download and install it. We're going to show you how to mimic Microsoft's offering using open-source software to unlock Windows accounts, investigate suspicious activity, see any file on a Windows disk and even peruse files that others believe have been permanently deleted.

computer forensics systems around these days, but many of them cost serious money or are only available to the police. However, the open-source community has one, called Backtrack 4. This is based on a stripped-down version of Ubuntu Linux, and is stacked with special security and forensics tools.

Despite being Linux-based, Backtrack will grant you complete access to data stored on computers running any version of Microsoft Windows. That's because Windows isn't running when Backtrack is booted from a DVD or USB pen drive. Linux can read Windows disks, but it doesn't obey the file permissions, so the machine's hard disk simply seems to contain a lot of files waiting to be accessed.

Backtrack 4 can boot and run directly from a DVD as a Live CD installation that never installs on your computer, but the best way to deploy it is by installing it on a USB pen (with a minimum 2GB capacity). This booting option brings Backtrack closer to Microsoft's COFEE than any other option. See 'Make a bootable USB pen drive' on [apcmag.com/makeusb.htm](http://apcmag.com/makeusb.htm) for how to do this.

First, you need to download the Backtrack 4 ISO file, which is just under 1.6GB. You can download it from the Backtrack site directly or click the 'Torrent' link on the same page. Once the ISO has downloaded, use it to make a bootable DVD or USB, insert the DVD or USB, and reboot the PC. Select the option to boot with a

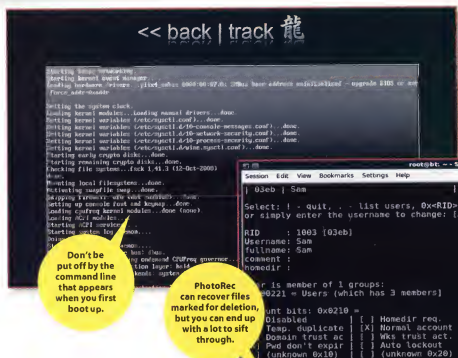
## FORENSIC TOOLKIT

There are plenty of commercial



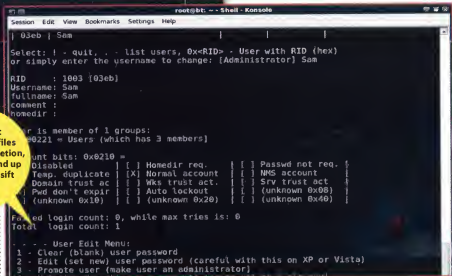


## FEATURE STORY computer forensics



## FACT FILE

When you log out of Backtrack from the K menu, the quickest way to reboot the PC is to enter reboot on the command line. You can also shut the PC down immediately by entering the command shutdown -h now.



as available for future reuse. It would be inefficient to overwrite the data those sectors contain until new data is ready to be stored. In the meantime, the old file is still there, available to be read by anyone with access to a file recovery utility.

Backtrack contains several such applications. Among the easier to use is PhotoRec, which is capable of scanning a hard disk and recovering a comprehensive list of all files marked as deleted. In fact, it can recover far more than just files deleted by users, including temporary files left over from when the operating system was installed. This means it's a good idea to have a spare USB pen drive handy to store the recovered files for later perusal, because they can easily run into the thousands. To get going, insert the drive and run Konqueror. Click 'Storage media' and then select your USB pen drive to ensure that Backtrack is aware of it. You can leave Konqueror open and check the scan's progress later.

Now run PhotoRec by navigating to 'Backtrack > Digital Forensics > Forensic Analysis' and then selecting 'PhotoRec'.

The program itself runs on the command line, but it's menu-driven, making it easier to use. When PhotoRec runs, it first presents you with a list of the hard disk partitions on the computer. In the case of a Windows-only machine, there'll probably be only one large one. However, in some Windows 7 installations,

there may be a second, small partition that the system uses to store recovery data. Use the up and down arrow keys to select the main partition, then press Enter to continue.

PhotoRec can understand a large number of partition table types and will automatically identify the one used on your disk, so accept the default on the next screen by pressing Enter again.

The next screen enables you to specify the file types to recover. Use the left and right arrow keys to highlight 'File Opt' at the bottom of the screen. Next, press Enter. The resultant display will give you a long list of all the recognised types. If you only want to recover one file type (JPG, for example), press S to deselect everything, then scroll down to the relevant type and press Space. You can use the Page up and Page down keys to navigate through the list more quickly.

Once you're happy with your file type selections, press Enter and select the filesystem you want to scan. Use the left and right arrow keys to select the 'Search' option, then press Enter. This presents you with a choice of filesystem types. For a Windows filesystem, make sure you select 'Other', then

press Enter. On the next screen, select 'Free' to ensure that the program only scans disk sectors that are marked as free space. Press Enter again to continue.

You'll now be asked where to store the recovered files. The default is the directory '/usr/local/bin', which is on the boot media. Press the left arrow key three times to get back to the root directory, then press the down arrow key repeatedly to navigate to the media directory. When you reach it, press Enter to see the media connected to the system. One of the devices you find should be the USB pen drive you inserted and navigated to in Konqueror just a moment ago. Select this and press Enter again. Finally, press Y to begin recovering deleted files.

The extraction process can take quite a while, depending on how much free space there is to scan on the disk and the number of file types you've specified. As the scan progresses, the number of files of each type will increase. PhotoRec creates a long list of subfolders in which it stores all the files it's recovered. By perusing these, you may be able to locate some interesting (even incriminating) pictures and other documents. [\[11\]](#)

Windows®. Life without Walls™.  
Toshiba recommends Windows.



# Think strength think Toshiba



PARTNER



With its slim, drop-tested magnesium chassis, Toshiba's Tecra R10 has the perfect balance of agility and power thanks to Intel® Centrino® 2 with vPro™ technology. Light on its feet at just 1.9kg and available with built-in 3G mobile broadband and 128GB Solid State Drive (SSD), this nimble notebook has the poise to make business a pleasure.

Contact your authorised Toshiba Reseller, call 13 30 70  
or visit [www.mytoshiba.com.au](http://www.mytoshiba.com.au)

*Toshiba is a proud Partner of the  
2010 Australian Commonwealth Games Team.*



Tecra R10

**TOSHIBA**  
Leading Innovation >>>

Intel, the Intel logo, Centrino, Centrino 2, Intel vPro and vPro Inside are trademarks of Intel Corporation in the U.S. and other countries. Toshiba (Australia) Pty Limited ABN 19 001 320 421



# SPOILT FOR CHOICE, OR JUST CONFUSED?

At Notebook Hunter we don't sell notebooks – we just rate them so you can pick the one that's right for you.

Most popular notebooks on the market listed.  
Only unbiased advice from tech experts.



[notebookhunter.com.au](http://notebookhunter.com.au)





# howto

PROJECTS, TIPS AND TRICKS



WORKSHOP

## HOW TO GET THE MOST OUT OF DROPBOX

Collaborate on projects, synchronise programs and more, all with one handy application. Jamie Middleton shows you how.

101

Tech tips plus reader questions and answers

84

Going virtual

88

Tweaking made easy

89

Publish iPod nano videos to YouTube

90

Roll your own Linux distro

92

## WORKSHOPS

Automate your PC

94

Print perfect digital photos

98

Get the most out of Dropbox

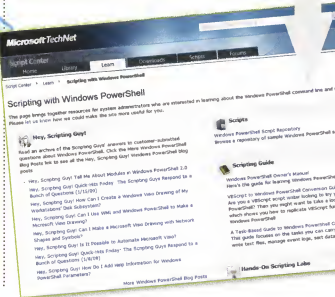
101

SEO toolchest: keyword search

104

Windows 7 SMB deployment

108





# quicktips

HELP AND ADVICE



**quicktips@acpmagazines.com.au**

Have you solved a tech problem or found a better way of doing things with your computer? Share your information with other APC readers by sending it in as a tip to [quicktips@acpmagazines.com.au](mailto:quicktips@acpmagazines.com.au), together with your name, contact number and 20-word bio. Each month we'll award a prize to the best tip (see prize below). Alternately, if you have a technical question post it online on our forums at [apcmag.com/forums](http://apcmag.com/forums) and other readers may be able to solve it.

## Experts solve your computing problems

APC, its readers and our partner publications can be one giant helpdesk. If you have a technical problem, chances are one of us can solve it.

### WINDOWS

#### DELAY STARTUP PROGRAMS

**Q** Is there a way to choose the order in which programs in the startup group or Run section of the Registry are executed? I have several programs configured to autorun, and while some, such as AVG, should run straight away, I'd be happy to postpone the execution of others, including update checkers, to help speed up my boot time.

*Dennis Crisp*

**A** One program you could use is the appropriately named Startup Delayer (<http://tinyurl.com/yxj7hrs>). This tool enables you to place a delay on the starting of programs in order to prevent system resources from being overwhelmed.

### INTERNET

#### MAKE CASH WITH LIVE PC SUPPORT

You may be used to helping people solve their PC problems, so why not use your knowledge to earn a little extra cash? You'll need a web site with FTP access and MySQL support. Install

LiveZilla (<http://livehelp.livezilla.net>) to add live chat, where site visitors can click a button to open a chat window on your PC. Then sign up at PayPal ([www.paypal.com](http://www.paypal.com)), go to the Merchant Services tab and create a Buy Now button with your charges. Integrate this with the LiveZilla button [instructions are at <http://tinyurl.com/ydwxgxlh>] and people will only be able to chat if they pay first.

### WINDOWS

#### WINDOWS 7 TAKES DIGITAL FILING TO THE FUTURE

Windows' folder structure has long been likened to a filing cabinet. While folders provide a handy way to group files, they're restricted by the same limitations as physical filing systems. The library system introduced in Windows 7 eliminates one of the problems associated with traditional PC folders, because it makes it possible to create multiple containers that can contain the same file. For example, a personal finances spreadsheet can be included in a Finances library as well as the Documents folder and others. This couldn't be achieved with folders alone without duplication.

The Win7 Library Tool (<http://tinyurl.com/yfwqzqp>) is a free program that introduces a

number of new ideas for libraries. You can view all your existing libraries in one place and it's easy to edit their properties or create new ones as required — the backup option is particularly handy. By far the most useful feature is the tool's ability to create library mirrors. This option appears after you import existing libraries, make changes and click the 'Apply' button, and it means that paths to libraries can be shortened. After all, brevity is the key.

### WINDOWS

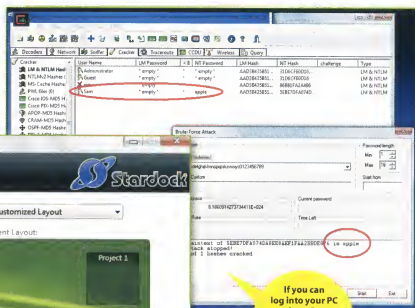
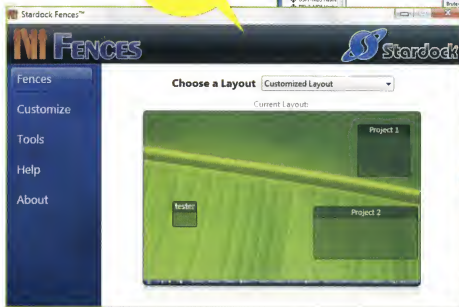
#### ORGANISE YOUR DESKTOP ICONS

**Q** In spite of my best attempts to the contrary, my Windows desktop is a chaotic mess of icons. I do my best to keep related items grouped together, but over time my organisation generally goes awry. I've experimented with creating folders to store shortcuts, folders and files, but this means extra searching and additional clicks to open what I need. Is there a utility that might be able to bring some more order to my computer?

*Jeremy Webster*

**A** Desktop customisation specialist Stardock has produced a free tool called Fences that may be just what

Organise your desktop icons: Fences makes it easy to group together related icons and then hide them to make things tidy.



If you can log into your PC under a Guest account, the program Cain & Abel will find your password.

you need. Describing the program's basic premise as reminiscent of Windows 3.1's Program Manager may not sound overly appealing, but, importantly, it works. There's also a paid-for version of the program available, but you can download the free edition from [www.stardock.com/products/fences/](http://www.stardock.com/products/fences/). Fences are semi-transparent boxes that you can place anywhere on the desktop and use to house files and shortcuts just like folders. Unlike folders, fences are attached to the desktop, so there's no need to have multiple windows open.

A quick double-click is all that's needed to hide fences and desktop icons, and any shortcuts you use frequently can be excluded from the hide list so you can locate them easily — no matter how busy your desktop becomes. You can add labels or adjust colour settings to aid identification of fences, or resize them to minimise their use of screen real estate. The first time you use Fences, it will offer to arrange existing icons automatically into a number of default fences, and it's possible to create numerous desktop layouts by taking snapshots of fences to record their positions. It's a simple tool that can make Windows much easier to use.

## WINDOWS CRACK WINDOWS PASSWORDS

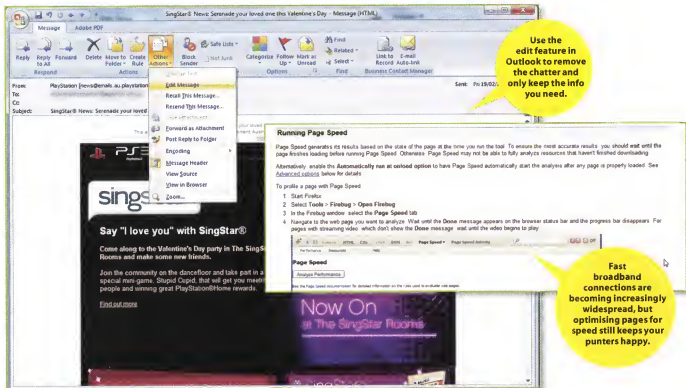
Don't worry if you've had a memory lapse — your Windows machine can be persuaded to divulge its password.

If you can log into the PC under a Guest account, the password-cracking program Cain & Abel is for you. It's an extremely powerful and free password cracker. Cain is the user interface to the application, while Abel is a system service that does the background work. Download the program from [www.oxid.it/cain.html](http://www.oxid.it/cain.html). After installing the executable, which includes the Pcap library to allow your network card to sniff your LAN for passwords, open the Cain directory under Program Files and copy the 'Abel.dll' and 'Abel.exe' files to C:\Windows. Next, double-click Abel.exe to install the service. Now, from the Start menu, select 'Run' and enter services.msc. This will display a list of services. Find Abel and right-click on it to start it [this saves having to reboot]. To test the software, set up a dummy Windows account and give it a password, then run Cain from the Start menu. Next, click on the Cracker tab. The list of current password

crackers is displayed in the left-hand pane. Click on 'LM & NTLM Hashes' and press the large black cross button at the top of the interface. Click 'Next' on the pop-up window to continue. The spreadsheet in the main pane will now fill with the details of your Windows log-in accounts. Right-click the dummy account and move the mouse over 'Brute-Force Attack'. Under the submenu that appears, click on 'LM Hashes'. A window will appear. Abel will try all possible combinations of symbols selected in the Charset dropdown menu. Click 'Start' and, if the password is a dictionary word, the program should crack it with alarming speed.

## INTERNET TONE DOWN IE TABS

**Q** I've been a user of Firefox for some time now, and have avoided using Internet Explorer since version 7. At work, however, I have no option but to use Internet Explorer 8, and the way it handles tabs is causing me irritation. When I open several links from a particular site in separate tabs, all tabs relating to that site are coloured in the same way. When I have numerous tabs open, the top



of the browser looks like a rainbow and I want to disable this feature if possible. Can it be done?  
**Alan Blackwood**

**A** This is something that many IE users have found distracting, so you're not alone. Launch Internet Explorer and click 'Tools > Internet Options'. On the General tab, click the 'Settings' button in the Tabs section and untick the option labelled 'Enable Tab Groups' before clicking 'OK'. You'll have to restart Internet Explorer for the new setting to be applied.

## VIRTUALISATION INSTALLING APPS IN VIRTUAL PC

**Q** I have Virtual PC set up in Windows 7 and I'm having trouble installing various programs. The installers start OK, but after I've selected a few basic options, a message appears reading 'Please wait while the installer finishes determining your disk space requirements'. A 'Return' button is also visible, but clicking it doesn't seem to have any effect. I've left the installers running for hours at a time and they never progress beyond this screen. The problem only relates to a few programs, but I can see no link between them. What can I do to fix the problem?

**Martin Haney**

**A** This is an issue with the Microsoft Installer in Virtual PC, and while little light has been shed on exactly why the problem arises, there are some workarounds you can try that have worked for many other Virtual PC users. If the installer is a Microsoft Installer file (with the '.msi' extension), open up a command prompt and use the command 'msiexec /i name of installer.msi'. If this doesn't work, try the alternative command 'msiexec /package name of installer.msi /qr' in order to run the installer with a different interface.

However, many installers are supplied as '.exe' files. If this is the case for you, open a command prompt window and use the command name of .executable.exe /extract x:\folder to extract to. This will extract the '.msi' file and enable you to use one of the alternative methods to install the software.

## INTERNET FIND YOUR SITE'S BOTTLENECKS

On the web, the need for speed stops — if you're a designer, you should still optimise images and link to multimedia rather than embedding it directly. This is particularly pertinent in the light of Google's recent admission that page speed is a component of its labyrinthine page rank algorithm. OctaGate's [www.octagate.com/](http://www.octagate.com/) is a free service that not only tells you how speedy your pages are to download, but

also pinpoints exactly where any bottlenecks may occur. As pages download, sitetimer saves data on every element, recording how long each takes to download.

More recently, Google came up with Page Speed ([tinypurl.com/oookccxs](http://tinypurl.com/oookccxs)), a Firefox add-on that you can use to generate a report on your code and your web server's efficiency in delivering it. If there's a bottleneck, Page Speed will find it.

## INTERNET EDIT EMAILS

**Q** I store most of my emails so I can refer back to them, but an email conversation can often lead to a lengthy series of replies, with useful information ending up scattered throughout various individual messages. Can I edit emails I've received so that I can group together the portions of text I want to keep, making it easier to find quickly? I'm using Outlook 2007.

**Paul Bardwell**

**A** We're always surprised how few people know Outlook lets you edit an email. Open the email in question by double-clicking it, then click the 'Other Actions' button in the toolbar before selecting 'Edit Message'. When you close the email, you'll be given the opportunity to save any of the changes that you've decided to make.

When shrinking your existing partition to make room for a new one, make sure you leave some free space for file movement.

Parted Magic is a Linux Live CD that includes a partition editor alongside other handy maintenance tools.

# Partition your PC's drive

With huge drives now becoming the norm, it pays to know how to partition them. **Joe Cassels** explains how to do it without trashing the other contents.

**Q** My notebook came set up with one large C: drive, which contains Windows and all of my data. I've since realised that I want to separate my data from all the Windows files in case I ever need to reinstall my OS in a hurry. I'd like to partition the drive, but I don't want to trash all the existing data. Is there a simple way to achieve this?

**Chris Rofe**

**A** There are various partitioning tools available that can help you achieve this, but it's worth making a backup of all your important data before you make any major changes. Partitioning a drive is, as you can imagine, a rather risky business.

Computers are generally sold with an OS preinstalled. In the majority of cases this is Windows, installed on a single partition on the PC's hard drive. The hard disk may also include a hidden recovery partition. This is created because it's easy for a manufacturer to set up one hard drive for each model and then clone it for each PC it sells. It's convenient for the vendor, but not always the best setup for the user. If you choose to stick with the default arrangement, Windows, your programs and your data are

mixed on the same drive, and should you need to restore the computer to its original state, all the data that's not been backed up will be lost.

## CARVING THINGS UP

Partitioning divides the hard disk into different parts that your PC treats as separate disks. It's a very useful technique for keeping data separated. You can set up different partitions when you install Windows — recent versions of Windows include partitioning programs in their installers. However, partitioning at this stage destroys all data on the disk. If you want to preserve your existing data and Windows installation, you'll need to use a non-destructive partitioning program.

Parted Magic ([www.partedmagic.com](http://www.partedmagic.com)) is a dedicated Linux-based Live CD that you can use to carve up your disk. You need to burn the ISO image to a CD to make a bootable disc, then start your computer using that disc. The program enables you to resize existing partitions and make new ones. You'll also find various data recovery tools on this disc.

Burn the Parted Magic ISO file to disc using your disc-burning program. You'll need to use the 'Burn ISO file to disc' option for this to work

properly. Boot from this disc and press 1 when the Boot menu appears. Once your PC has loaded up, you'll see a simple desktop. Double-click the 'Partition Manager' icon in the bottom-left corner of the screen to launch GParted. This will interrogate your hard drive and display a diagram of all its current partitions. You may see one or more recovery or utility partitions that weren't originally visible in Windows — these are likely to be no bigger than a couple of gigabytes and are usually best left alone.

Select your main partition and choose 'Resize/Move'. Change the size of this partition to make room for a new one for your data and click 'Resize/Move' again. Select the newly created space and click 'New', then choose 'Extended partition' and click 'Add'. Click 'New' again and then opt to create a logical partition using the NTFS filesystem. Give it a label and then click 'Add', then 'Apply' to make the change.

It will take a while to resize the partition, especially if there's quite a lot of data that needs to be moved. Once the process is complete, reboot your computer into Windows. You can now move all your data from your C: drive to whatever the new logical drive is in Windows. [tiny.cc](http://tiny.cc)





# insider tips

HOW THE PROFESSIONALS DO IT

IN THIS  
ISSUE

- 88 Windows View • Going virtual 89 Linux Window - Tweaking made easy 90 Publish iPod nano videos to YouTube 92 OS Challenge - Roll your own Linux distro

## Going virtual

How to unleash the power of Windows Virtual PC.

Windows Virtual PC was released in October 2009 and was almost completely overshadowed by the public release of Windows 7. Additionally, Virtual PC was seen more as the foundation of Windows XP Mode, one of Microsoft's attempts to mitigate application compatibility problems and facilitate quicker business uptake of Windows 7. In so far as it did attract industry attention, Virtual PC ended up being seen as simply a means to an end, rather than a major application release in its own right.

The previous offering from Microsoft in the area of desktop virtualisation was Virtual PC 2007, which, when compared against competitors like VMware and Sun Virtualbox, was looking distinctly outdated and lacking in functionality. The latest release — while its focus is still very much on virtualising only Windows operating systems — is a powerful and flexible virtualisation solution.

Although only the Professional, Enterprise and Ultimate versions of Windows 7 come with the bundled Windows XP licence needed to run XP Mode, if you have any pre-existing Windows licences then you can use them in hosted VMs. This offers the opportunity for developers and IT pros to run multiple environments on the same system, while taking advantage of the many client/host integrations that Virtual PC supports, such as USB/smart card, printer redirection, folder sharing, clipboard sharing and application publishing.

Application publishing makes use of the Remote Desktop protocol. Virtual machines are powered on but run in the background with no open application window, but published applications are integrated into the host Start Menu and streamed onto the host desktop. This functionality is available for all supported guest operating systems — it's not unique to XP Mode.

The hardware requirements to run Virtual PC are minimal, but the host system must be running Windows 7 and have a CPU with hardware-assisted virtualisation enabled (AMD-V or Intel-VT). Depending on the number and size of virtual machines in operation, RAM can quickly become a bottleneck, so 4GB is a recommended minimum, which necessitates a 64-bit host. Supported guest operating systems are Windows XP, Vista or 7, but must be 32-bit. This is a limitation not imposed by competitor products. Other

operating systems like Windows Server (full and Core) or Linux distributions can be made to function, but do not support the full range of client/host integration features. Basic Linux integration is possible using the Linux Integration Components for Hyper-V, which is available as a free download from Microsoft.

Another aspect of Virtual PC is its use as a platform for legacy games. If you have some older games kicking around that worked fine on Windows XP but not on later operating systems, it is possible to install them on an XP virtual machine and stream them out to the Windows 7 desktop. Microsoft's Ben Armstrong (aka. The Virtual PC Guy) has a number of articles dedicated to the trials and joys of virtual gaming, so check it out for some ideas, as well as a load of tips and tricks for enhancing your Virtual PC experience. If you decide that it's all too much effort but still want to resurrect those old games, head over to [www.gog.com](http://www.gog.com), where a large range of titles have been remastered for full compatibility with Windows XP and Vista, which means that they should run fine on Windows 7 as well. [www.gog.com](http://www.gog.com)

Quake 2 running on Windows 7 through Virtual PC seamlessly!



APC  
EXPERT



JAMES  
BANNAN

James Bannan is a systems manager at St Leonard's College (Vic) and APC's resident Windows expert.

# Tweaking made easy

While Windows has a plethora of third-party tools, Linux doesn't have quite the same scope.

Perhaps it's because a majority of its users are quite familiar under the hood, or perhaps because there's less to play with (or, at least, obviously exposed for all but the bearded-gurus among us) but there is just one definitive tweak tool — Ubuntu Tweak. And it makes sense that this tool is tailored around Ubuntu, as this is by far the most popular distribution that appeals to Windows users making the switch and, in so doing, might like to tweak and change Ubuntu in ways that aren't immediately apparent to the end user.

We've actually covered Ubuntu Tweak before, but it's now reached a stage of maturity that it can be considered all but an essential application for every Ubuntu desktop. So if you're not already using it, here's how to install it and a quick guide of its most useful features.

## ADDING THE REPOSITORY

You can install Ubuntu Tweak as a one-off application, or instead have its repository added to your install, and thereby have it automatically upgraded with each new release. To do this click System > Administration > Software Sources, then click the Other Software tab followed by Add. Enter the following:

```
http://ppa.launchpad.net/ubuntu-tweak-testing/ppa/  
ubuntu karmic main
```

This is the 'unstable' version, which gets updated more frequently. If you prefer to stick with milestone releases, use this one instead:

```
http://ppa.launchpad.net/tualatrix/ppa/ubuntu karmic  
main
```

Select to refresh your sources when you click Close, then open up a terminal and install it with:

```
sudo apt-get install ubuntu-tweak
```

Or search for 'tweak' in Synaptic and install it from there. Once installed launch it from Applications > System Tools.

## UBUNTU TWEAK TOUR

One new feature for Ubuntu Tweak is regularly updated application and sources lists. The first time you click on Application Center and Source Center you will be prompted to download the latest lists from Ubuntu Tweak's servers, which is naturally a good idea.

And here lies one of Ubuntu Tweak's strengths: installing applications that can't be found in Ubuntu's repositories. A good example of these include Google's Chromium browser, Sun's VirtualBox, XBMC, NVIDIA VDPAAU (covered in last month's Open Source Challenge), Dropbox, Skype and Firefox 3.6 (as Canonical won't update Firefox to 3.6 until Lucid Lynx).

To install these click on Source Center then Unlock. Select the repositories you want to add, then click Refresh. Then click Application Center and you should find new applications showing up (for example, Chromium under Browser, after adding Chromium Browser Daily Builds from Internet in the Source Center).

There is plenty to explore in Ubuntu Tweak, but I'll direct your attention to two other very useful features. Under Auto

Start Programs you'll be able to toggle which programs run at boot-up, much like Windows's auto run. There are usually a number of services you probably don't need, such as the Bluetooth Manager or Power Manager, both of which you're not likely to need unless you're on a notebook.

The second is the Package Cleaner. Under this option you'll find four cleaning tools to remove old and out-of-date packages, cached packages and configuration files from your system. This is good to do in order to free up disk space after doing a number of upgrades, but specifically the Clean Kernel feature you'll find is a boon: you may have noticed after numerous kernel updates that your boot menu has become polluted with various kernel versions. This tool will allow you to remove old kernels and clean up the boot menu at the same time.

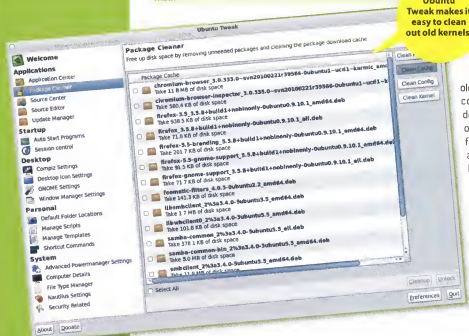
There's a lot more in Ubuntu Tweak than there is space to cover here, so to find more head to the homepage at [ubuntu-tweak.com](http://ubuntu-tweak.com). [\[TIP\]](#)

APC  
EXPERT



ASHTON  
MILLS

Editor of the *Linux Pocketbooks* series, and now with *CHOICE* magazine, Ashton has been a tech journal for over 13 years, including five years with APC.



# Publish iPod nano videos to YouTube

Create home movies from your iPod nano footage using the free Windows Movie Maker.

APC  
EXPERT



JENNETH  
ORANTIA

An expert on all things mobile, Jenneth Orantia has been writing reviews and tutorials on smartphones for the last seven years. Her current phone of choice is the iPhone 3G, but she's also well-versed in Windows Mobile, Symbian, Palm and BlackBerry.

Following suit from the iPhone 3GS, the latest fifth-generation iPod nano now includes a VGA video camera for recording short movie clips. Unlike the iPhone, however, the new iPod nano doesn't include any video editing features, nor can you upload the finished clip directly from the device.

But the iPod nano's video recording capability does have some merits over the iPhone 3GS, mainly in its ability to apply special effects to the video before you commence shooting — a feature that's not traditionally found on pocket camcorders or phone video cameras. The iPod nano includes 15 funky effects that you can access by pressing and holding on the centre button when the video camera is active, including X-Ray, Film Grain, Kaleido and Twirl, making even the most mundane footage look interesting.

But how often when you've finished recording your masterpiece? iTunes doesn't provide any facility for editing video clips, so you'll need to resort to a third-party program for editing and publishing the final movie.

To transfer the video clips from your iPod nano to your desktop, right-click on the Windows Start menu and select 'Open Windows Explorer'. In the side-panel on the left, select the name of your iPod nano [under Computer] and double-click DCIM on the right. All of your video clips will be in the DDDApple folder. Highlight the MPEG-4 video files [by pressing Ctrl and simultaneously clicking on the relevant files] and drag them to your Videos folder [under Libraries in left-hand side panel in Windows Explorer].

You can quickly make a movie using a handful of video clips and a background song using the free Windows Movie Maker on Windows Vista or 7. To start, launch the Windows Movie Maker application [usually found under the Windows

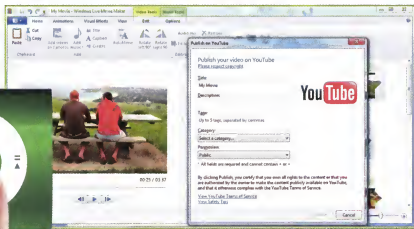
Live folder in the Start > All Programs menu] on your PC. Click on the 'Add videos and photos' button at the top of the window and browse to the video clips that you transferred from your iPod nano. Select the clips that you want to use [you can select more than one by pressing Ctrl while you're clicking on the file names], then click Open. Thumbnails for the clips that you selected will appear in the main window of Windows Movie Maker.

If you don't want to spend too much time editing the movie, the AutoMovie feature [accessible from an icon in the menu bar] will automatically group the clips together, add title and credit screens, and include a background song. If you've got photos that you'd like to include in the movie as well, the AutoMovie feature will add pan and zoom effects to the video clips and photos. Once AutoMovie has worked its magic, press the Play button on the left-hand side to see the final movie.

Making changes to the auto-generated movie is easy. To change the text on the title or credit screens, double-click on the thumbnail of the screen on the right and then click inside the main view on the left — a text box will appear where you can change things like text, text colour, text font and background colour.

To publish your movie on YouTube, click the YouTube logo in the menu bar [accessible from the Home tab]. You'll be required to login to your YouTube account and specify details about your movie such as its title, description and category. Alternatively, if you want to save the movie to a DVD, click on the menu button [next to the Home tab] and click Save movie > Burn a DVD. [Go on](#)

Now there's a way to bring your nano's cinematic masterpiece to the masses.



# MSY TECHNOLOGY

The Name You Can Trust - More than 13 Years In The IT Industry - Best Price Everyday with Widest Range - Top Brand Cost You No More

## WHY DO ALL PEOPLE BUY FROM MSY?

- \* Range: Find products you can't find from other IT shops.
- \* Location: There is a store near you in VIC/NSW/QLD/SA/WA.
- \* Price: Well known for always the best price in town.
- \* Reliable: The name you can trust. 13yrs in IT Industry.



**\$5** Only

**A-Power Digital Alcohol Tester (Reference Only)**  
"Every Vehicle's Must Have"



**\$9** Only

**Microsoft VX 500 USB Webcam**  
"Top Brand Lowest Price"



**\$99** Only

**Asus VH162D 16" Lcd Monitor,**  
8ms Response Time,  
2000:1 Contrast Ratio

## Latest Innovations from **ASUS** [www.asus.com.au](http://www.asus.com.au)

Rock Solid • Heart Touching

**ASUS UL50VT Turbo XX025X**



-Turbo 33 Technology  
-Up to 12hrs battery life

**2 Year Global Warranty**

Intel SU7300 Processor, 4GB Memory, 500GB HDD, DVD-Burner, 15.6" Screen  
512MB Nvidia GT210M Dedicated VGA Card, Windows 7 Professional

**"Back to School Promotion" – Present Your Student ID To Be Entitled To A Free Upgrade to Asus 3 Years Global Warranty Valued at \$199**

**\$1249** Only



**ASUS MS236H**

The Ultra Slim Digital Visual Artpiece

- 2ms Response Time
- 1.65cm ultra slim profile
- LED touch sensor buttons
- HDMI/D-SUB connection

**3 Years Warranty**  
On-site pick-up and & warranty



**\$269** Only

**ASUS EeeBOX B202 160G**



- Small (only 1L) and barely audible (only 26 decibels)
- Save up to 90% in energy consumption
- Easy to mount on any LCD monitor (VESA 75/100 standard mount)

Intel Atom N270, 1GB Memory, 160GB HDD  
DVI, Gigabit LAN, Wifi N, XP Home

**\$299** Only



**Please visit [www.msy.com.au](http://www.msy.com.au) for full range of products**

VIC:	Malvern	121 Waverly Rd	03 9572 4411
	Pasco Vale	439 Gaffney St	03 9379 4677
	Clayton	9, 214-224 Wellington Rd	03 9560 2288
	Boxhill	Suite 1, 2A Cambridge St	03 9897 4833
	Brooklyn	553C Geelong Road	03 9314 1377
New	North Melbourne	653 Queensberry St	03 9328 2029
New	Cheltenham	Shop 7, 1291 Nepean Hwy	03 9584 0599
New	Geelong-Norlane	15 Labuan Square (Norlane S/C)	03 5278 3747
NSW:	Auburn	Shop 118 Level 1, 219 Parramatta Rd	02 9648 4116
	Ultimo	60A, 558 Jones St	02 9280 3123
	Chipping Norton	6, 53-55 Governor Macquarie Dr	02 9723 2997

QLD:	Morningside	188 Thyrne Rd	07 3217 9070
	Slacks Creek	15 Randall St	07 3290 1908
	Brendale	Unit 4, 20 Kenworth Place	07 3881 1315
New	Gold Coast-Varsity Lakes	Unit 4, 80 Casuar Drive	07 5593 1439
New	Indooroopilly	Shop 2/172 Clarence Road	07 3720 8755
New	Ipswich-Bundamba	45 Brisbane Road	07 3816 0011
SA:	Adelaide CBD	132 Franklin St	08 8212 1656
	Plympton Nth	9 Kinkaid Ave	08 8293 3555
	Holdenhill	Unit 1, 560 North East Rd	08 8266 1433
New	Elizabeth	10 Gillingham Road	08 8252 3232
WA:	Balcatta	Unit 3, 511 Wimmeroo Rd	08 9344 1002

OPEN SOURCE CHALLENGE

# Roll your own Linux distro

It used to be that you needed lots of time and technical nous to make your own Linux distro. That's no longer the case.

APC  
EXPERT



ASHTON  
MILLS

Ashton has been using Linux since Slackware came on hoppers, and before that he was one of the three people in the world who used OS/2 (and loved it). Always ready to make the most of his PCs, he is constantly playing with Linux distributions and compiling the latest kernel. This is his idea of fun, and why we get him to write for you.

In the past, to make your own Linux distro you needed to start with a base like Linux From Scratch, then pick the applications and features you wanted. The results weren't a cohesive whole the way distros like Ubuntu are made, but it could certainly be something you could call your own. Now however, thanks to Novell and its SuSE Studio product, you can roll your own distro in little more than half an hour.

Naturally, this will be based around SuSE, which is formulated around RPM packages, as opposed to DEB that Ubuntu uses. This won't matter unless you intend to build your own packages, as the studio works by letting you define the binaries you want to include for everything from X Windows and NVIDIA drivers through to GNOME, KDE, OpenOffice and a whole lot more. You can build your own tailored distribution as small as a console-only boot CD to a full-featured DVD. And, after creating an account, you get a nice 15GB to store your creations online too.

## WORKING IN THE STUDIO

Currently SuSE Studio is in beta and invitation only: you can request an invite by heading to [www.susestudio.com/login](http://www.susestudio.com/login). New invitations are being issued every week, so it shouldn't take too long to get one. Once you get invited, you can tie it into your Novell, Google or Yahoo! account.

Starting a new build is as simple as logging in at [www.susestudio.com](http://www.susestudio.com) whereupon you'll be greeted by the create

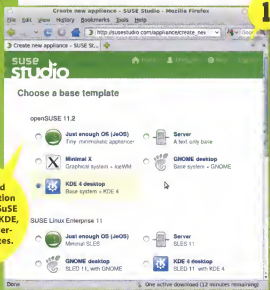
new appliance page — here you can choose to make a build around the desktop or enterprise targets for SuSE, and in either 32-bit or 64-bit architectures. There is also an 'Additional templates...' link that will take you to some third party templates, such as for building a LAMP (Linux, Apache, MySQL and PHP) server. This includes, helpfully, options to build SuSE installs with cutting-edge KDE and GNOME desktops.

1 Once you've picked your basic template, you enter the main building process structured as five tabs along the top of the page — Start, Software, Configuration, Overlay Files and Build. You'll spend most of your time in Software, and this where the Studio really shines.

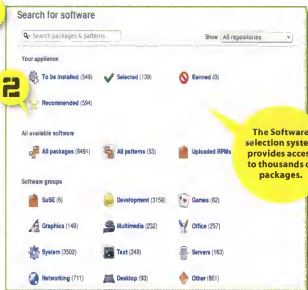
The page is divided into three sections: Sources, Selected Software, and Search for Software. If you're familiar with Ubuntu think of sources as repositories, from which you can then search for software to add to your distribution, after which it will show up under the selected software packages.

The basic template starts off quite bare, and if you intend to make a useable distribution you're going to need to add a few essential packages, or preferably 'patterns' as the Studio calls them (pre-defined selection packages, such as 'KDE' for all the packages required for KDE.)

Helpfully, under the search for software section, there is a search pattern called 'Recommended software.' This

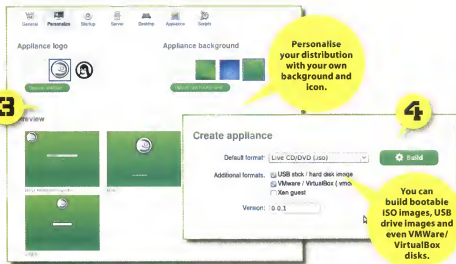


You can build a new distribution based around SuSE and GNOME or KDE, as well as server-based templates.



The Software selection system provides access to thousands of packages.





## RECONSTRUCTOR

A less visually appealing alternative is Reconstructor ([build.reconstructor.org](http://build.reconstructor.org)). The software selection system is a little more archaic — builds start off bare so you'll need to add X11, Gnome, browsers, utilities and so on to get a bootable system — but in its favour you can start a build around a Debian or Ubuntu. A range of modules allow you to add specific features, like custom boot menus and repositories, or to add a default homepage to Firefox. Built images stay available for seven days and can be made public via project pages so others can download them.

narrows the search filter to the type of packages you're probably going to want to install, such as browsers and office software. You'll need to search within the recommended packages to find what you want — ie. once you click for recommended packages the search panel shows 'in:recommended', simply appending another string such as 'kde' will show up all the recommended KDE packages.

As noted, however, an easy way to install the essential packages for a particular group or application is to use patterns. So, rather than manually select all the required KDE packages you can instead clear the search bar (click on the 'X') and then select 'All patterns', followed by appending KDE in the search bar, or alternatively directly type in 'in:patterns kde'.

Now it gets a little complicated. The patterns select the necessary packages, but not necessarily the optional but related packages. If you've searched on KDE as above you'll see 'kde4' as a pattern, but clicking on it will show a pop-up detailing the base packages that will be installed and a 'Recommended software' heading. If you like what you see in this click the 'Add all' button next to it. Below this there is a 'Suggested software' list, and you can optionally add all these too.

As you add packages, the sidebar on the left will automatically update with both the install size and the compressed image size, which can be a helpful gauge if you want to make an image that fits on a CD (640MB or less).

That's the basis for software selection; spend some time browsing for and selecting your favourite programs.

As a minimum, in addition to the default selected patterns, we recommend adding the following: enhanced base (and add all recommended in this), console (if you're a console junkie), file server (if you want to connect to SMB shares, or alternatively search for 'in:recommended samba'), and under non\_

oss (click on it) select 'Add all' for Recommended so you get Flash added for browsing. It's also worth adding the latest Firefox and kernel.

### SOURCES

The default sources provide some 8000 packages from the default SuSE repositories, but these are only a fraction of the available software you can add.

At the top, under Software Sources, click on 'Add repositories...' and you'll be presented with a rather long list of optional sources you can use — some 80 pages' worth! For every source you add, new or updated packages will be available when you search in patterns and packages.

A great one to try, for example, is the kernel repository. After all, this is your own distribution build, you might as well grab the latest kernel at the time instead of using the [now out of date] default selection from the SuSE sources right?

To add the latest kernel to your selection type in 'kernel' and then add 'kernel backports'. Now, under the software selection section, searching on 'kernel' will show results from the new sources. From here you can select 'kernel desktop' to get a desktop-optimised version (remember to remove 'kernel default' too). To add the latest Firefox 3.6, search on 'mozilla' and add the Mozilla Factory source, then search on 'mozilla' for under packages.

### CONFIGURATION

This tab has a number of sections, and they're a breeze to use. Starting with the default locale, language, network and user selections (add at least one user) it moves onto Personalize where you can give your distribution a unique splash screen for bootup and login, or choose a SuSE default. You can also upload a logo, and it will be superimposed on the splash screens.

The Startup section allows you to set if it will boot directly to the GUI or not (runlevel S), while the Server section allows you

to set up PostgreSQL and MySQL databases, including adding records from the get-go.

The Desktop section allows you to specify which programs auto-start at login and then the Appliance section lets you specify some of the more interesting features of the Studio — memory and disk sizes for VM images, disk image size for USB appliances, and whether you'd like your new distribution to be bootable as a live CD/DVD. Finally, the Scripts section lets you add scripts to run at bootup.

### BUILDING

The Overlay files tab allows you to add non-distribution files to the final build, copied across after installation. Finally, the Build section allows you to put it all together into a downloadable ISO — or alternatively, raw image for a USB stick or even a virtual disk for VMWare and VirtualBox. You can build all three if you wish and download them at your leisure.

But why wait? The Studio actually lets you launch your new images in a virtual machine over the net — the server will load the image and display the output in your browser. It's not fast, but you'll be able to instantly tell if you missed anything important (eg. if the image doesn't boot!) and then go fix it without sucking up your bandwidth quota.

This is just a quick tour of the Studio, but it's a brilliant idea and very well executed. If you're only remotely familiar with Linux appliances, you can quite easily build a distribution — albeit based around SuSE — that exactly meets your needs quickly and easily. That you can customise and personalise to a degree as well is just icing on the cake.

SuSE is a close runner-up to Ubuntu in terms of ease of use for the desktop, although some would say it supersedes it. Certainly, if you haven't tried SuSE before, you might as well build your own custom version of it, if only because you can. [www.reconstructor.org](http://www.reconstructor.org)

IN THIS  
ISSUE

94 How to automate your PC

98 Print perfect photos

101 Get the most out of Dropbox

WHAT  
YOU'LL  
NEED

## AUTOTIT TOOLS

The Autotit development environment provides everything you need to create, edit and compile scripts. You'll find it at <http://tinyurl.com/2ruvw7>.

While you're there, grab a copy of the full Autotit Script Editor, too — it has some extremely useful macro recording features that we'll be needing later.

## Automate your PC

**Mike Williams** shows you how to save time, cut PC hassles and boost your productivity with the powerful scripting tool Autotit.

Owning a PC is supposed to save you time, at least in theory: the computer takes over the simple, repetitive tasks, leaving you to get on with more important matters. But in practice, it doesn't always work out that way. Many PC users follow the same routine every day, running the same sequence of programs, issuing the same keystrokes and performing the same tedious maintenance tasks, step by laborious manual step.

Sound familiar? Then you need a way to automate these processes, making your PC life a little easier. A scripting language that's more powerful than batch files, yet remains simple and accessible to everyone, expert and novice alike. A free tool that can run programs and simulate keypresses and mouse clicks to take the manual hassles out of just about any tedious task, and all in simple EXE files that you can share with others — no bulky runtime environment required. You need Autotit, one of the best free PC automation tools around.

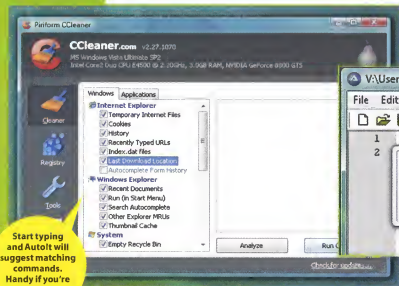
## GETTING STARTED

Autotit scripts start life as simple text files with AU3 extensions, and the easiest way to build them is with the SciTE Script Editor that comes bundled with the package. It understands the Autotit language, so if you type 'Run', for example, then it'll display the first Autotit function that begins with those letters: Run, which is used to launch programs. Press Tab and it'll enter that function for you, then add a parenthesis — Run( — and it'll display information on the function options, and how they should be used. [See the online documentation at <http://tinyurl.com/431kd> if you need more details.]

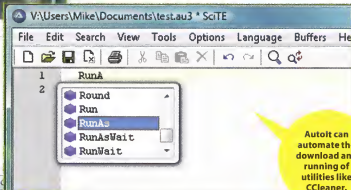
At first glance these functions can seem very complicated. The full syntax of the Run command, for instance, looks something like:

```
$PID = Run( "program" [, "workingdir" [, show_flag[, opt_flag ]]])
```

You can specify the program you want to run, its working directory and its window type [hidden, maximised, minimised], as well as low-level details regarding your STDIN, STDERR and STDOUT streams, returning the process



Start typing and Autotit will suggest matching commands. Handy if you're new to scripting.

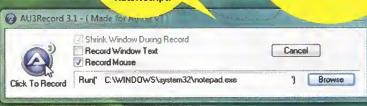
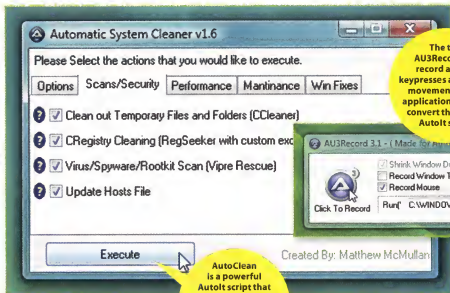


Autotit can automate the download and running of utilities like CCleaner.

**Missed a tutorial?**

Visit [www.alexhopkins.com.au](http://www.alexhopkins.com.au) for back issues of APC.

The tiny AU3Record will record all your keypresses and mouse movements in any application and then convert them to an AutoIt script.



AutoClean is a powerful AutoIt script that downloads, installs, configures and runs several PC security, maintenance and cleanup tools.

identifier as a result. Gulp.

Don't panic, though. Everything but the program name is totally optional, so in fact launching a program can be as simple as typing: `Run("C:\Program Files\Microsoft Office\Office12\Winword.exe")`.

If the executable isn't in the current Windows path then you'll need to tell Windows exactly where to find it. That's easy, too — just type in the following for Office: `Run("C:\Program Files\Microsoft Office\Office12\Winword.exe")`.

It's actually really simple, then, although maybe not suitable for every occasion. The Run command simply launches a program and moves on to the next line of your script, so if you've specified five programs in a row then they'll all launch almost simultaneously, which may not be what you want.

If you want to launch Notepad and then launch a back-up tool to save your work after Notepad has finished, you might use a sequence such as this:

```
RunWait("Notepad.exe")
Run("MyBackup.exe")
```

The RunWait function launches a process, then waits until that process has closed before continuing. This ensures that your chosen programs appear in sequence rather than all at once.

## AUTOMATING CCLEANER

Once you start having a go at this kind of scripting, all sorts of possibilities appear. If you've ever used the excellent hard drive cleanup tool CCleaner, for instance, then you'll know that you normally have to launch it manually, choose your options, click 'Run cleaner', confirm that you really want to delete files and so on. It's not all that difficult, but there are a few time-consuming processes involved.

However, if you launch CCleaner.exe with the /AUTO command-line switch by typing in `Run("CCleaner.exe /AUTO")` then the program simply runs with its current settings, without bothering you with any prompts or questions. It just beavers away on its own, doing its work invisibly in the background.

Once you know about that, you can construct another AutoIt script to take advantage of this handy feature:

```
RunWait("C:\Program Files\Mozilla Firefox\Firefox.exe")
Run("CCleaner.exe /AUTO")
```

Launch IE from this script, and every time you close the browser it'll automatically invoke CCleaner to clear your internet tracks. That's convenient, but we can go one better. Consider the following:

```
Opt("WinTitleMatchMode", 2) $DoForever=1
While $DoForever=1 WinWait("Firefox")
WinWaitClose("Firefox")
Run("CCleaner.exe /AUTO")
Wend
```

The WinWait command tells the script to pause until it finds a window with 'Firefox' in its title (WinTitleMatchMode in the first line defines how that search is performed). WinWaitClose pauses the script until that window is closed, then launches CCleaner.exe. On hitting the Wend statement, it checks that the variable \$DoForever is still 1, then loops back to the WinWait statement and pauses again until a Firefox window appears.

You could leave this script running all the time — once compiled it can consume as little as

## QUICK BACKUPS

The AutoIt DirCopy command is useful for quick backups. Using `DirCopy("C:\Work", "D:\Backups", 1)`, for instance, will copy all files in C:\Work as well as all of the subdirectories and files below that (the complete folder structure) to D:\Backups. The last flag should be 1 if you want to overwrite existing files, or 0 if you don't.

2 MB of RAM. It will detect when you've finished a Firefox session, then automatically run CCleaner to clean up, with no manual steps involved at all. (Use the AutoIt system tray icon to pause or close the script if you no longer need it.) The script is easily customisable — just change 'Firefox' to Chrome to detect Chrome browser windows, say — and the principle could be applied to many other situations, essentially any time you want to run a program automatically when another one has finished.

## SIMULATED KEYPRESSES

Being able to launch programs is useful, but it's actually just the first step in automating your PC. The next comes in controlling those programs or Windows services to make them do what you need them to do, something that AutoIt can do by feeding them simulated keypresses with the Send function, as follows:

```
Run("Notepad.exe")
WinWaitActive("Untitled - Notepad")
Send("The time and date is {FS}").Send("{p}")
WinWaitActive("Print")
Send("{p}")
```

Here we're launching Notepad and using WinWaitActive to wait until the Notepad window decides to appear. The script then sends the raw text 'the time and date is' before simulating pressing F5 to display the current time and date.

Using the ampersand symbol in a Send

## COMPILE YOUR SCRIPTS INTO EXE FILES

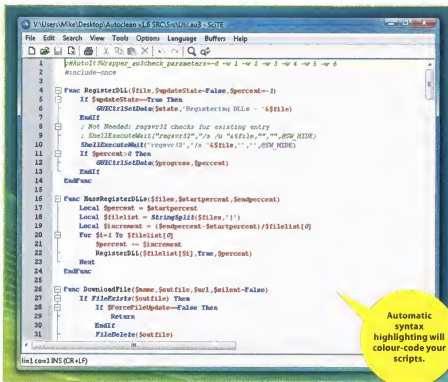
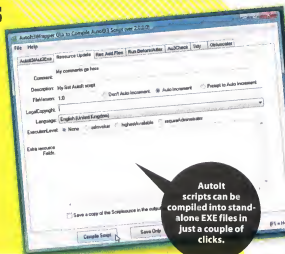
If you want to run an AutoIt script on your PC, you could simply double-click it. AutoIt associates the file and carry out whatever steps you've defined.

Occasionally you'll want to run a script on a system where AutoIt isn't installed. Luckily it includes a tool that can help by compiling your script into a stand-alone executable file. This will have no special dependencies, you don't need to have the .NET Framework or any other runtime files installed, and it should work on any system running Windows 2000 or later.

If you have a script open in SciTE then you can start the compilation process by clicking 'Tools > Compile'. Alternatively, right-click your AU3 file and select 'Compile with options'.

There are plenty of settings available to help configure your finished executable. If you want to give your new executable a custom icon, for instance, then click the 'Icon browse' button and select your ICO file. And if you click the Resource Update tab then you'll be able to enter a comment, description of your program, file version and copyright message, which will then be visible to users (right-click the file, select 'Properties > Details').

If you just want to create an executable file, though, simply click the 'Compile' button. In a matter of a few seconds, AutoIt will produce an EXE version of your AU3 script, in the same folder, ready for testing or sending to other people.



function simulates pressing the Ctrl key, so sending 'p' is equivalent to pressing Ctrl+P. (Beware: case often matters, so 'p' and 'P' rarely have the same effect. Use lower-case letters unless you're sure upper case is required.)

The next WinWaitActive function waits for the Print window to appear. Finally, using an exclamation mark simulates the Alt key, so sending 'p' has the same effect as pressing Alt+P — which clicks the Print button.

You can apply the same principles to automate any application. Launch Internet Explorer, for instance — 'Run("c:\program files\internet explorer\iexplore.exe")' — then use

Send("{!d}") to simulate Alt+D, selecting the address bar. Add a URL and the Enter key — 'Send("www.google.com{enter}")' and IE will access that site for you.

You can also automate some useful Windows keypresses. The '#' character represents the Windows key, for example, so you could use Send("{#d}") to simulate Win+D, which would minimise all windows and display the desktop. Another thing you could do is lock your PC from a script with Send("{#l}").

The Send function also supports special codes for simulating many alternative keypresses, including Tab, Page Up, Page Down, Numlock Off, Numlock On, Printscreen and a

## DISABLE INPUT

Using the Send function in AutoIt will simulate keypresses, but if the user touches a key as well then your sequence will be broken. To prevent this, use BlockInput(1) before the Send function to disable mouse and keyboard input, then BlockInput(0) afterwards to enable it again.

wide range of others (see the online documentation at <http://tinyurl.com/ygtxswxw> for the full list).

## MACRO RECORDER

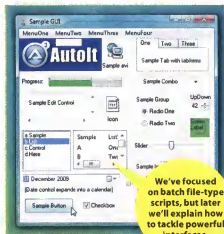
Send is an extremely powerful function, then, that will let you automate just about any Windows or application task. But getting it to work manually can be tedious, especially for long sequences. You'll have to take careful notes of each keypress you make, perhaps adding WinWaitActive or other statements to make sure your simulated keys go to the right place, and if you get it wrong then there's no telling what problems might follow. Fortunately, there's a simple alternative: use AutoIt's SciTE script editor to record the necessary steps for us.

To try this, first open SciTE, click 'File > Save As' and give your file a name like First Macro.au3.

Click 'Tools > Au3 Recorder' to launch the macro recorder. If you don't see an Au3 Recorder menu option, make sure you've downloaded and installed the full version of SciTE from <http://tinyurl.com/2ruv7v>.

Click 'Browse' and navigate to the program you'd like to automate. Pick something simple like Notepad.exe, MSPaint.exe or Calc.exe when you're getting started — these and many other Windows applets are generally in the Windows\System32 folder.

Click the 'Record' button and Au3 Recorder will launch the application you specified, then



begin recording your mouse movements, clicks and keypresses. Complete whatever steps you want to try — clicking '2+2=' in Calc, for example — then click the 'Au3 Recorder' button again to stop recording. It will immediately pop up a script representing everything you've done; a Run command, Send functions for any keypresses, WinWaitActive statements; everything we've seen so far, and mouse movements, too.

Does it work, though? Try it: close the application you've been automating if you've not done so already, then switch back to SciTE and press F5 to launch the script. You should see the program open and follow the sequence you've defined, in just a few seconds. It's all very straightforward and makes it much easier to start automating more complex Windows tasks.

## AUTOMATED INSTALLS

The Autolt commands we've looked at so far are very simple: run a program, send a keypress, wait for a window and so on. These aren't exceptions, either — the rest of the language is just as straightforward. If you needed to download a file within a script, for instance, you'd use a command like this: 'InetGet("http://

## CREATE ALERTS

Autolt's MsgBox function is a flexible way to display alert messages. Entering the line 'MsgBox(0,"Alert","Something bad has happened",10)', for instance, displays 'Something bad...' in a message box titled 'Alert', then automatically closes the box after 10 seconds. See the official documentation at <http://tinyurl.com/yjbu97f> for more.

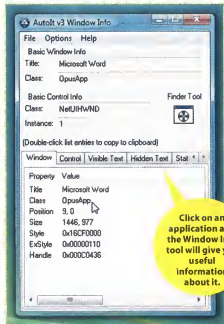
## MORE INFO

If you can't wait for part two of this workshop and would like to explore Autolt further right now, then point your browser at <http://tinyurl.com/yjbu2nfi>. The online documentation has in-depth details on all aspects of the Autolt language, and it's the first place to look if you need any scripting help.

`www.domain.com/folder/file.exe`", "c:\downloads\file.exe"). This grabs a file from the remote URL, then copies it to the local path you specify. It even works with both FTP and HTTP servers.

The real value of Autolt, though, comes when you begin to string these commands together. What if, for instance, you were to build a 'disaster recovery' script — something that you could use in case you suspected a malware infection? If you wanted to download a free, on-demand antivirus scanner to protect your computer, you'd normally have to go online, browse to the manufacturer's web site, follow the download link, locate the right version for your system and then download and install it.

With Autolt, though, there's none of this hassle. You could use InetGet to download the latest version of a few antivirus tools — simply entering 'InetGet("http://security.symantec.com/sscv6/Setup.exe", "c:\setup.exe")' would



get you Norton Security Scanner, for instance. A Run command will launch it, then you could use Send to simulate keypresses and step through the set-up wizard. That's easier — and probably quicker — than doing it all manually.

The excellent AutoClean script (<http://tinyurl.com/yge9pho>) takes this idea even further by creating a tool that can be used to fix broken or infected PCs. It automates the download and launching of great tools such as CCleaner, RegSeeker, Defraggler, Vipe Rescue and more, as well as automatically uninstalling common junk, optimising Windows settings and so on. Download a copy and browse the source to see how it's all done.

Next issue we'll take a look at automation that goes beyond keypresses, and explain how you can control key functions of Windows using just a few short and very simple Autolt scripts. [▶▶▶](#)

## MAKING SCRIPTS PORTABLE

It's easy to write Autolt scripts to simulate keypresses that'll control operations on your PC. Ensuring they'll prove just as reliable on other systems is more difficult. You might write something to launch Control Panel, or Explorer, then send Tab keys to select the control you need. And it may work, too, but what happens if, say, you change from Classic View to Categories in Control Panel, or use some different view in Explorer? The keypresses you need to simulate an action may also change as you move from one operating system to another, or if you add or remove add-ons. You could find a script launches entirely the wrong dialog box, with potentially disastrous results.

Always think about portability issues when you create a script, then. If possible, avoid choosing anything by using Send to simulate a long sequence of keypresses — select it directly, instead. Don't use arrow keys to move around Control Panel — find the right command to launch the applet you need. In a dialog box, use shortcut keys to jump directly to the required control. Consider how things might change in other versions of Windows, especially if you're automating something like the Start menu. And think carefully before you use Autolt to control anything that can harm your system, such as formatting drives — the risk of error may outweigh the benefits.





# Print perfect digital photos

**Matthew Richards** helps you make the most of your printer to create brilliant photo prints every time.

## WHAT YOU'LL NEED

### AN INKJET PRINTER

Most modern inkjet printers are capable of great photo output. Canon, Epson and HP models with five or more inks give particularly good colour reproduction.

### A DIGITAL CAMERA

We recommend an absolute minimum of three megapixels for full A4 borderless prints. Practically any modern digital camera will suffice.

While digital photography is essentially free once you've paid for your camera and memory cards, there's still a cost involved if you want to turn digital images into prints.

Printing at home compares competitively with having your prints created by an online photo lab such as Photobox or Snapfish, especially once you take postage prices into account. But what about the quality?

In our tests, with a little careful preparation of your printer and close attention to the print settings, a modern inkjet printer (such as one of Canon or HP's five-ink models, or an Epson six-ink photo inkjet printer) is capable of producing better-quality photo prints than most online. You also get more control over brightness, contrast and colour into the bargain. Factor in the immediacy and convenience of photo printing right on your desktop, and you're onto a winner. But for home printing to be efficient, everything needs to be set up the right way.

## CALIBRATE YOUR MONITOR

**1** The first step is to adjust your monitor. To make monitors stand out in shop windows, many manufacturers bump up the default settings for brightness and contrast, meaning that what you see on-screen may

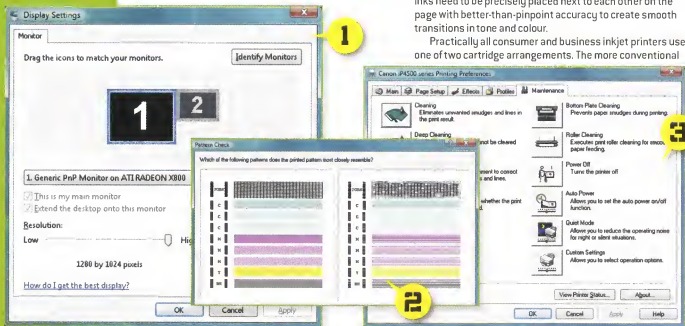
bear little resemblance to what you get in print. First, ensure that you're using the maximum colour depth in Windows Display Settings (normally 24-bit or 32-bit), then go to the monitor's DSD (On-Screen Display) menu and select the sRGB colour setting if available. This should be a good match for your printer. If this isn't available, or if you want tighter control, switch to the 6500k or User Defined colour setting.

After switching off any auto image enhancement options in your printer driver, print a photo that has a good range of colour and plenty of detail in highlights and lowlights onto glossy photo paper. Now adjust the brightness, contrast and colour settings of your monitor until you find the closest match to the print.

## ALIGN THE PRINT HEADS

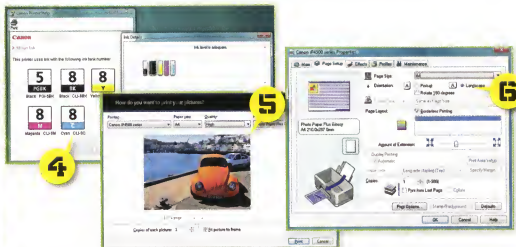
For a sharper image, it's important to ensure that your printer's print heads are accurately aligned. Some inkjet printers can print with resolutions of up to 9,600 dots per inch when using their highest quality settings, which makes photo printing an incredibly high-precision process. The need for accuracy isn't just for reproducing fine lines, subtle textures or sharp details: tiny droplets of different coloured inks need to be precisely placed next to each other on the page with better-than-pinpoint accuracy to create smooth transitions in tone and colour.

Practically all consumer and business inkjet printers use one of two cartridge arrangements. The more conventional



## PAPER PATH

Many printers—including most of those in Canon's PIXMA range—feature dual paper input trays, with one built into the base and another at the rear. For photo printing, it's best to use the rear tray because this avoids the need for the paper to be tightly curled on its way through the printer. For printers where you have to put photo paper face-down in an underlying tray, ensure that the tray is as clean as possible, or put the photo paper face-down on a sheet of plain paper when loading.



method uses black and tri-colour cartridges with the print heads built in. These days, a more popular (and cheaper) method is to use print heads that are part of the printer, so the 'cartridges' are merely tanks containing coloured ink.

If your printer's cartridges have built-in print heads, you should carry out a head alignment every time you fit a new cartridge. Even if your printer has fixed print heads, it's still good practice to do this once every couple of months, to avoid any inaccuracies that can creep in over time. To do this, open the Printer Preferences or Properties dialog box and run the Print Head Alignment procedure from the Utilities or Maintenance section, simply following the on-screen instructions.

### CHECK THE NOZZLES

**2** Blocked print head nozzles are the curse of inkjet photo printing, ruining potentially excellent results with faint lines produced laterally across the print. To avoid wasting expensive ink and photo paper, carry out a nozzle check regularly. As with print head alignment, you'll find this procedure in the Maintenance or Utilities section of the Printer Preferences dialog box. Load the printer with plain A4 paper and start the routine, which will usually print a grid pattern of fine lines using each of the different ink colours. Check the results, paying close attention to any areas

where lines or blocks of colour are missing, and run a head cleaning routine if required.

Many inkjet printers run a mini cleaning cycle each time the printer is switched on, so if you don't use the printer often it's a good idea to at least switch it on once every few days to reduce the risk of ink drying in the tiny nozzles of the print heads and causing stubborn blockages.

### CLEAN THE PRINT HEADS

**3** If there are any gaps in the nozzle check pattern, you'll need to run a head cleaning cycle. This process will attempt to clear any existing print head blockages by blasting ink through them. You may need to run the cleaning function two or three times to clear the blockages. If this doesn't help, find out if your printer has a 'deep cleaning' feature. This will use much more ink than the basic cleaning cycle, so only use it as a last resort. One trick that often works is to leave the printer for half an hour after you've carried out the basic cleaning function and then try again, because dried ink often gradually softens by itself after the first attempt.

### CLEAN THE PAPER FEED

For high-quality photo printing, the paper transport system needs to operate just as precisely and smoothly as the print head mechanism. If it doesn't, sharpness will be degraded and fine or dark lines may be produced

across the page. Paper feeding may be intermittent, irregular or fail altogether if there's a build-up of dust on the paper feed rollers. Luckily, many printers have a utility in Printer Preferences for automatically cleaning them.

Another problem is that ink may be present on the bottom plate of the printer, especially after outputting large quantities of borderless prints (where a small overlap is printed off the edge of the page), or after repeated cleaning or deep cleaning cycles. To clean the bottom plate, fold a sheet of plain A4 paper in half, then unfold it again and load it into the paper input tray with the crease facing downwards (or upwards if the paper is flipped over as it passes through the paper transport path). Next, press the manual paper feed switch to send it through the printer. Repeat the process until the paper exits the printer with a clean crease.

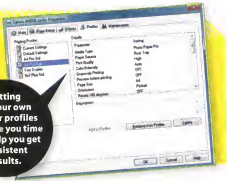
### CHECK YOUR SUPPLIES

**4** A quick check on the printer's status will let you know if ink supplies are running low. In our experience, a printer maker's genuine ink cartridges are better than cheaper, third-party equivalents for photo printing, giving greater colour accuracy and fewer problems with nozzle blockages in the print heads. It's equally beneficial to stick with the manufacturer's own-brand photo paper, because the chemistry between ink and paper is specially formulated to give premium results

## CREATE PROFILES

The need to adjust a wide range of hardware preferences for photo printing can make setting up your printer properly a time-consuming chore. It's also easy to forget one or two setting options, which can result in poor print quality and inconsistent results. One easy solution is to create printer profiles for tasks that you want to repeat often. After you've selected and adjusted all the

options that you want to set for a task, switch to the Profiles section of the Printer Preferences dialog box and save the profile with a descriptive name. Doing this allows you to reproduce all the relevant settings with a single click in the future, cutting down on time and effort while keeping your prints looking consistent over time.



## howto • workshop

along with resistance to fading. In some cases, third-party ink and paper supplies can result in noticeable fading after only a few weeks.

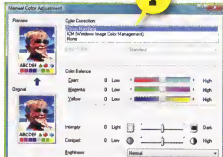
### PRINT FROM VISTA

**5** Windows Vista has handy tools for printing individual photos or groups of selected shots directly from their folders via the Print button in the main toolbar. For best results, it's important to set the correct paper type, because the amount of ink required can change considerably for different types of paper. You also need to set paper size and quality mode. The Standard photo quality setting generally suffices for 6 x 4 in or 7 x 5 in photos.

For premium A4 quality, it's best to switch to the High Quality setting, which may be referred to as Best or Max DPI mode. A checkbox at the bottom of the Vista Print dialog box labelled 'Fit picture to frame' is available for creating borderless prints, but ensure that the photo paper you're using is compatible with borderless output. This often isn't the case for canvas-style or photo rag papers.

### FINE-TUNE THE SETTINGS

**6** Whether you're using the Windows Vista photo printing function (a similar tool is also available in Windows XP) or printing from a photo-editing program, you can still access the



main Printer Preferences dialog box to fine-tune the settings. With Windows Vista, click the Options link at the bottom right of the Print Pictures window. You'll now have control over aspects such as how much extension is applied to borderless images, trading loss of picture area against the risk of white lines at the edges of prints.

Many inkjet printers also include Auto Optimisation or other enhancement features for correcting colour balance and exposure errors in images that have a colour shift or are too light or too dark. This can be useful if you're printing directly from a memory card or a PictBridge-compatible camera, but if you're editing images in a program such as Photoshop Elements, it's best to turn this feature off for the sake of predictable and accurate printing.

### ADJUST COLOUR MATCHING

**7** If colour matching seems consistently poor, there are usually various ways to correct it. For example, with popular Canon printers you can usually switch to Manual Colour/Intensity in the main section of the Printer Preferences dialog box, then choose between Driver Matching (default), ICM (Windows Image Colour Management) or no colour matching at all.

There are some additional options for adjusting intensity, contrast and brightness, and you can also tweak the colour balance in a couple of ways — by either increasing or decreasing any of the cyan, magenta and yellow printing colour components.

### TRY SPECIAL EFFECTS

Many printers include optional settings to apply special effects, either through the printer driver or from their onboard controls and LCD menu/preview screens. The latter is particularly useful for direct printing from memory cards. As well as automatic optimisation, options often include illustration effects, monochrome choices for sepia or colour-tinted output and 'vivid' settings that boost colour and contrast. It's difficult to gauge the precise effects and strengths that some of these options produce, so it's a good idea to try small test prints first. [www.rihac.com.au](http://www.rihac.com.au)

## more colour, better choices.

### Never Buy Ink Cartridges Again!

- \* Save up to 90% of your current printing costs
- \* Equivalent up to 10 sets of original cartridges (approximately \$1000 worth)
- \* Starting at \$120 pre-filled with premium grade UV dye ink
- \* Easy refill, 100ml ink reservoirs made from ABS impact resistant plastic resin
- \* No modifications to your printer required
- \* Available for most Epson®, Canon®, Brother® and HP® brand printers



**rihac** continuous ink supply systems are a simple alternative to using genuine ink cartridges and will provide you with high quality prints at a fraction of the price.

**rihac™**  
[www.rihac.com.au](http://www.rihac.com.au)  
Shopping available online



### Exceptional Print Quality For Personal & Professional Use

157 Union Road Ascot Vale, VIC. 3032 Phone: (03) 9005 5555

Email: [info@rihac.com.au](mailto:info@rihac.com.au) | [www.rihac.com.au](http://www.rihac.com.au)

\* All brand names, trademarks and photos are the property of their respective holders and are used for reference only.

# Get the most out of Dropbox

Collaborate on projects, synchronise programs and more, all with one application. **Jamie Middleton** shows you how easy it is.

## WHAT YOU'LL NEED

### A PC RUNNING VISTA OR WINDOWS 7

We used a modern PC, but most of these functions will work just fine with older Windows operating systems and even Macs.

### AN INTERNET CONNECTION

Dropbox relies on the Internet to function, so make sure you're hooked up and online.

### DROPBOX

Although you can access the service via the web at [www.dropbox.com](http://www.dropbox.com), it helps to have the associated client software installed. You can download it from the Dropbox web site.

For those not already familiar with Dropbox, it's an ingenious file-sharing and synchronising service that works across any operating system, including PCs, Macs and even the iPhone. Available from [www.dropbox.com](http://www.dropbox.com), you can set up a free account that gives you 2GB of storage space, or get a 50GB Pro account for US\$9.99 a month.

Once installed, Dropbox appears as a folder called My Dropbox within your Documents folder. But this is no ordinary folder: whatever you copy into it is automatically uploaded to the Dropbox server. Install Dropbox onto another computer, log on using the same details and the files will automatically be downloaded onto that computer too. Leave it logged in and, no matter which machine you're using, whatever you update on your Dropbox will be saved on all your other devices as well. This means you can leave those easy-to-lose USB sticks at home and still have the most up-to-date versions of the files you're working on to hand, provided you've saved them into your Dropbox folder.

Even if you haven't installed Dropbox onto the PC you're working on, you can still access your files by logging into your account on [www.dropbox.com](http://www.dropbox.com), where they appear as files that can be downloaded from the site. (Bear in mind, though, that this method lacks the automatic synchronisation option and you'll have to remember to upload any files you've worked on back onto the Dropbox site yourself.)

## SECURE SHARING

There's no need to be worried about security, either: Dropbox uses very secure AES-256 encryption over an SSL-

encrypted channel to share and save your data. Just make sure you use a strong password! The only slight worry we can think of is the fact that you're entrusting your documents to a cloud-based app that, despite its burgeoning popularity, could disappear overnight. However, provided you also back up your files at home, this shouldn't be a problem.

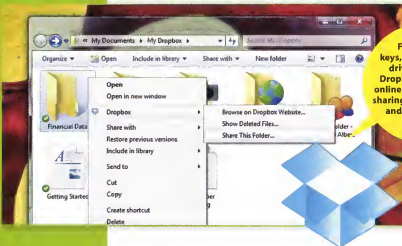
The beauty of Dropbox lies in its simplicity. It just works quietly in the background. Even if you aren't online when you make changes to a file in your Dropbox folder, when you connect to the internet, Dropbox will detect the file changes and update the document. But don't be fooled by that simplicity — the app may only synchronise files, but people are using it in many different ways. From working on collaborative projects to hosting web sites and remote controlling BitTorrents, Dropbox's functionality knows no bounds. We'll explore a few of these possibilities here.

## COLLABORATIVE PROJECTS

As well as sharing files across computers, you can use Dropbox to share files with other people. In fact, because Dropbox is so accessible it can often be a better solution than a network share. It also keeps a revision history, so you can see who added what and when — meaning that tracking the collaborative process is done for you automatically. You can even go back to previous versions of files and restore them if a mistake is made or a file is overwritten (see the 'Undo history' box).

Your Dropbox account lets you share files in two ways: with everyone in the world (by putting your file(s) into the Public folder in your My Dropbox folder) or with chosen individuals who can also add files to the shared folder. To share a folder with specific people, log on to the Dropbox site, go to the Files tab and click on 'Create a new folder'. Right-click on the new folder and choose 'Share this folder'. Next, send an email to the people you'd like to collaborate with. Those with Dropbox accounts will have the folder appear in their Dropbox if they accept the invitation, and those without are prompted to sign up.

**Forget USB keys, portable hard drives and FTP: Dropbox is a simple online solution for file sharing, synchronisation and backup. And it's free!**



# Dropbox

## UNDO HISTORY

Managed to delete an important document from Dropbox before realising you hadn't saved it anywhere else? Don't panic: Dropbox keeps a list of revisions you've made to your Dropbox folder and allows you to undo them. It saves 30 days of your history as standard (Pro accounts get an unlimited history). To get that all-important file back, you just need to log on to your online account, go to the Files tab, click 'Show deleted files', click on your missing file and press 'Restore'.

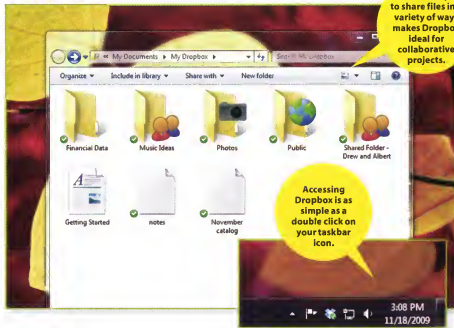
## STORE ALL DOCUMENTS

Dropbox is all very well as a USB stick replacement, but you still have to remember to copy your documents into the My Dropbox folder. One solution is to keep the master files saved only in your Dropbox folder, but it can quickly become a mess of image files and documents. It would be nice to keep all your files in the folders you'd usually put them in, without having to copy them somewhere else for synchronising. Well, provided your Documents folder doesn't take up more than the storage space available in your account, you can put it into your Dropbox in its entirety.

To do this, right-click on your Documents folder, choose 'Properties' and move its location into your My Dropbox folder. This means you can carry on working as before, while having your entire Documents folder available wherever you go. However, in the unlikely event that Dropbox disappears, this means all your files could also be lost. Plus, should someone get access to your Dropbox account, they could delete it all (although the undelete function does mean you could get it back again). Provided you keep a regular backup of your files elsewhere, the benefits may still outweigh the possible costs.

## SYNCHRONISE PROGRAMS

Wouldn't it be handy if the Firefox browser on



your notebook had all the same user preferences, extensions, bookmarks and themes as your PC? Wouldn't it be satisfying if any changes you made to your Firefox profile were automatically changed on all the computers you worked on? If you have Windows Vista or 7, then with the help of Mklink you can do just that. The Mklink function is essentially a shortcut creator, where you can create a file that points or links to another file or directory on a different part of your computer. The difference with Mklink is that it creates these 'hard links' or 'symbolic links' at command-line level, so programs that wouldn't accept normal shortcuts can use them. Couple this power with Dropbox and now you can sync programs as well as files.

Take Firefox as an example. All your personal data (browser settings, bookmarks, history and so on) is saved as a profile, which is typically found at this location: C:\Users\[your PC name]\App Data\Local\Mozilla\Firefox\Profiles. Once

you've ensured that Firefox isn't running, select this folder and copy it into your Dropbox, then delete the original folder. Open a command prompt (type cmd into the Search box on the Start menu) and type mklink.

You should see a series of the commands available to you along with a description of what they do. Now, using the 'J' command to create a directory hard link, enter: mklink /J %APPDATA%\Local\Mozilla\Firefox C:\dropbox\Firefox.

You'll need to change the address lines to where your Firefox profile and Dropbox are located. Repeat this process on all your PCs (you'll need to have administrative rights) and whatever you do to Firefox will now be mirrored wherever you go and whatever PC you use.

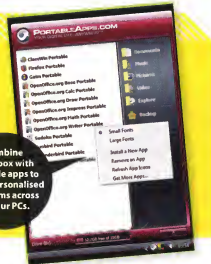
This basic process can be applied to any program you wish: you could store your Thunderbird mailbox on Dropbox to have your emails available everywhere, or use it to store your game saves so you never need to repeat a

## PORTABLE SOFTWARE

You might not be keen on using Mklink to mess around with your computer at the operating system level to synchronise your programs between computers. However, if you still like the idea of having all your personalised settings and even emails wherever you are, there's a simpler way to do it. The open-source community has long experimented with running self-contained programs and even operating systems from USB keys, meaning you can carry around personalised versions of applications in your pocket.

Dropbox now does away with the need for a USB key, as these portable apps are also great for

using with the service. There are a variety of free open-source editions of popular applications available. These are self-contained versions of programs such as Firefox, the Thunderbird email client and even OpenOffice.org, and because they don't install themselves in different places throughout your operating system but are kept together in one location (your Dropbox folder), you'll have your software wherever you go, tweaked to your tastes. For a list of free open-source software and freeware portable apps, see [www.portableapps.com/apps](http://www.portableapps.com/apps).





## GET MORE FREE SPACE

You get 2GB of free space when you sign up to Dropbox, but this can quickly be used up if you're using your Dropbox for multiple purposes. However, it's possible to more than double your space for free by referring people to Dropbox. For each person who successfully signs up, you're awarded an extra 250MB, up to a maximum of 3GB (12 people).

Dropbox has made it easy for you to refer people. After signing in, head to **www.dropbox.com/referrals** and you'll be given three options. The first lets you copy and paste a link to identify

you as a referrer, which you can also post automatically to Facebook or Twitter by clicking the icons above your referrer link. The second allows you to invite contacts from your email account by logging into it and choosing which you'd like to receive your referrer code. Lastly, you can just type or paste in email addresses and send your code to them. You can see how your referrals are doing at **www.dropbox.com/**

### account/referrals.

A further 250MB is yours just for doing five of the six tasks listed at **www.dropbox.com/gs** (invite a friend, take the Dropbox tour and so on). Add all this together and you can get up to 5.25GB of space for very little effort.

level. See the 'Portable software' box for other ways to access personalised programs no matter what computer you're using.

## STORE PASSWORDS SAFELY

Secure passwords are difficult to remember. That's why more and more people are using open-source programs such as KeePass (**www.keeppass.info**) to manage their passwords. KeePass lets you generate long, complicated and unique passwords for each of your logins and remembers them for you. This means you only have to know one long secure password (for the KeePass login) to increase your online security exponentially. However, if you're on a different computer to KeePass then you can't find out what your password is and you can't log in to that essential site. The solution is to use Dropbox to store both KeePass and your password archive.

If you're worried about security, KeePass [and, for that matter, Dropbox] uses the same security that banks and the military use to send and store their data: AES 256-bit encryption. So provided your KeePass password is a secure one, a criminal won't get any joy from your archive file.

## ENCRYPT YOUR DATA

Are you still worried about how secure Dropbox is despite the site's many assurances? Do you

want to synchronise sensitive data across all of your computers? By using APC favourite TrueCrypt (**www.truecrypt.org**), you can create an encrypted drive that's accessible from any computer. This is a file of a fixed size that looks like a normal file but acts like a drive partition. You can hide other files within the volume of this file and it disguises their size and the data that they contain.

To add TrueCrypt protection to your Dropbox, download the program from **www.truecrypt.org/downloads**, double-click on the '.exe' file and choose to extract it to your My Dropbox folder. This puts the portable version of the app into your Dropbox.


To create the encrypted file, open the 'TrueCrypt.exe' file and click on the 'Create a volume' button. Choose 'Create an encrypted file container', then 'Hidden TrueCrypt Volume' and lastly 'Normal Mode'. Give your file partition a name, choose AES encryption, set the size of the file (the outer volume) and create a username and password. Any encryption is only as strong as your password, so choose a long, complicated one. Now click 'Format'. You need to do the same again to set the inner partition size — where you'll put your files. You also need to leave room for some decoy data, which is placed between the inner and outer volumes to give the impression that this outer layer is the real encrypted drive. Choose a very different

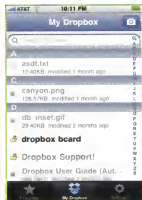
password for the inner volume so it isn't compromised if the outer layer is accessed.

To open your partition, start TrueCrypt, click on 'Select file...', choose your file and click 'Mount'. After entering your password, you can drop files in here to encrypt them. Note that it's best only to access it from one machine at a time to prevent conflicts.

## PORTABLE DROPBOX

There are still some situations where it may be useful to carry Dropbox itself around with you — say, if you can't install Dropbox permanently on a public PC that you use often. Step forward DropboxPortable, which is available at **http://tingurl.com/yaathn8**. Once you've successfully installed it, you can get access to your Dropbox files from pretty much anywhere you fancy.

So, why not carry the files on a USB stick instead of a portable version of Dropbox? Well, imagine you need a work file you haven't put in your Dropbox, such as an image for a presentation. If you've shared a folder with a colleague then they can drop it into your shared Dropbox folder — so when you plug your USB stick into the computer at your destination it'll be downloaded automatically and end up sitting on your USB stick waiting for you. This means that you can be on the train to a meeting while your presentation is having the finishing touches added to it back at the office. 



The key to Dropbox's success is the way it allows users to share files across so many different devices and platforms.



# masterclass

STEP-BY-STEP TRAINING

IN THIS  
SERIES

Ash Nallawalla continues his Masterclass, focusing on online marketing. The series will cover online advertising, web site monetisation, network marketing, blogging for profit, affiliate marketing... and more!

APC  
EXPERT



ASH  
NALLAWALLA

Ash Nallawalla manages natural and paid search traffic for some of Australia's largest web sites. He is an internationally acknowledged expert in search marketing and he runs an online SEO training web site. Ash can be contacted at [ash@melbpc.org.au](mailto:ash@melbpc.org.au) or via his blog at [www.netmagellan.com](http://www.netmagellan.com).

## PART 7 ONLINE MARKETING

# SEO toolchest: keyword search

All the tools to help you research the search terms that users are typing into search engines.

Words are the currency of search engines. Using the right words — keywords — if you will — will make the difference between success and failure.

Many business web sites are built with little awareness of search engine optimisation (SEO), at least when it comes to the written content. For now we will ignore the sites built entirely in Adobe Flash, as they cannot be optimised to the same extent as a regular HTML site.

Traditional copywriters have a difficult hurdle to cross when writing for the web. Their natural tendency is to write catchy headlines and paragraphs, without holding back on superlatives and puffery. Often the client expects this.

Consumers, on the other hand, are unpredictable when they type a query in a search engine. Although search engines are getting better at interpreting user intent, they have to use the literal text supplied by the user. The same two or more words when placed in a different order can result in a different search engine result page (SERP).

Once came across a page featuring "Apartments — Serviced". As this is a competitive niche, it does not appear when searching for "serviced apartments". When a user searches for "nails", were they expecting to buy artificial nails, have a manicure, or a hardware store? Google presumes fingernails, not the hardware variety.

WHAT'S  
NEXT?

PART 8  
MAY 2010  
LINK BUILDING  
AND SOME NEW  
TOOLS

1

Word Manager: Bizcatalyst.com.au

Search Add Group Table Editor

Get keyword suggestions

Australia - English - Google UKTool

mp3

Keyword Searches

Keyword	Searches	Results	KEL x 1000	Trends
mp3 players	3,500	1,500	2,000,000	781
mp3 rocket	1,500	42	8,940	254
convert vma to mp3	1,000	3,500	73,200,000	167
samsung mp3	820	82	63,500	195
convert mp4 to mp3	540	200	967,000	81
creative mp3	540	190	632,000	57
mk4 to mp3	350	1,000	25,300,000	39
samsung mp3 player	350	190	980,000	36
convert mp3 to mp3	280	42	51,700	34
mk4 to mp3 converter	280	155	804,000	29
river mp3	230	155	855,000	28
mp4 to mp3	230	125	621,000	25
creative mp3 player	190	42	75,100	23
hypsosink mp3	190	350	5,440,000	22
beats mp3	190	190	1,580,000	22
mp3 to mp3	190	200	1,580,000	19
mp3 converter	100			

Select ad group

Add group Default keyword list (101)

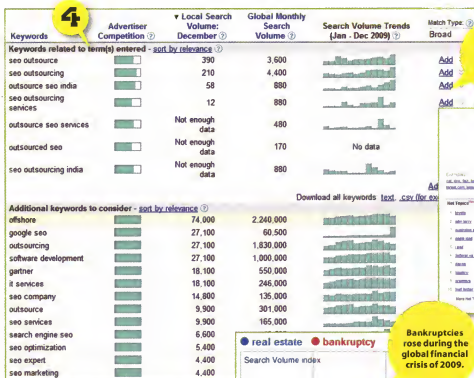
Switch To Editor Refine Get Searches, Results & KEL

Track customer sites and produce reports with IBB.

Export To Google AdWords & Others

Selected keywords: 1 of 101





Google AdWords Keyword Tool.



This could lead to a costly, wild-goose chase if you built a web site around this phrase.

Market Samurai coined the term SEO Traffic (SEOT) to suggest the number of visitors a #1 ranking site could expect in a day. It has determined 80 to be the threshold for useful keywords, so you can filter out low-traffic potential phrases.

It also coined Phrase to Broad Match Ratio (PBR) to eliminate misleading keywords that may come up in a Google Keyword Tool result. By generating permutations of a phrase and comparing the number of searches for each permutation, it can help you eliminate misleading phrases that have a low PBR.

Sometimes all keyword permutations have a low PBR. This indicates a missing word in the phrase, which can happen in an unfamiliar niche. You want to find phrases with a high PBR.

To determine an adequate but not excessive level of competition, Market Samurai defines SEO Competition [SEOC] as the total number of web pages that mention a keyword in the same word order. Choosing a threshold of 30,000 pages is an adequate level of competition.

To determine commerciality of a keyword, Market Samurai takes the SEOT and multiplies it by the Google AdWords Cost Per Click value. It calls this the SEO Value [SEOV]. This becomes another filter for eliminating phrases below a certain value. The Market Samurai web site has a wealth of useful resources for the online marketer. The user guide is presented as a list of video tutorials in a virtual Dojo, with nine

dedicated to keyword research. Full transcripts are also included. You can download a free trial that gives you full functionality for 12 days, but thereafter the keywords tool and all the videos are available even if you don't buy.

URL: <http://marketsamurai.com/c/acc>

## GOOGLE ADWORDS KEYWORD TOOL

The Google AdWords External Keyword Tool is aimed at Google advertisers, but SEOs and copywriters can also benefit from it. You can select local Australian results as an indication of which terms are popular. It also tells you when certain related keywords and other terms are popular.

**4** Affiliate marketers will benefit from the search volume trend data because they might not know whether an unfamiliar niche has a seasonal pattern or is popular all year round. The graph of advertiser competition is a clue to a keyword's popularity, but bear in mind that intense advertising occurs when

organic ranking is keenly contested, so this is a clue that organic ranking could take a lot of effort.

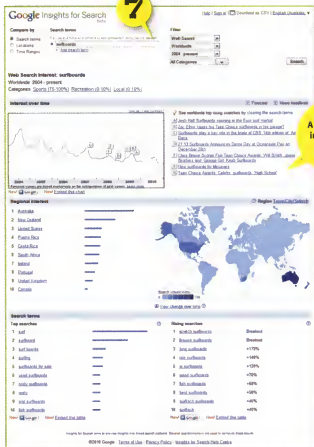
You can use it by setting the locality to Australia and entering one or more keywords. When I entered *seo outsourcing*, I discovered that *seo outsource* got more searches in Australia, so a copywriter would need to work that phrase into the copy. If I were writing for a global audience, I would take note that *seo outsourcing* got more searches than *seo outsource* and adjust the copy accordingly.

I could also use one of the related keywords such as *seo company* on the basis that a searcher who needs the outsourced service might search for *seo company*.

URL: <https://adwords.google.com/select/KeywordToolExternal>

## GOOGLE TRENDS

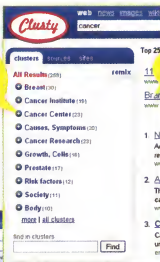
**5** Google Trends is a free tool from Google for checking search volume trends over



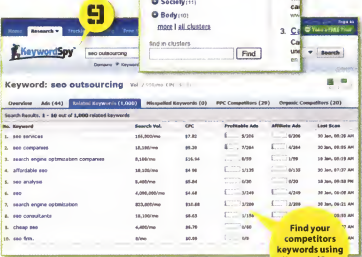
7

A declining interest in surfing?

Clusters of concepts in Clusty.



8



9

Find your competitors keywords using KeywordSpy.

time. You can look up one or more search terms provided that there is a lot of traffic to those phrases. Google does not quantify this number. These short-term trends are useful if you want to make money on a paid search campaign for a day or two. For example, if one of the hot topics is some celebrity, then you could look at running an AdWords campaign for a few days to sell something related to that celebrity, such as an Amazon book affiliate link.

**6** Google Trends can also help non-web writers and researchers to observe searcher behaviour over a number of years. For example, searches for real estate did not drop much during the financial crisis; however, searches for *bankruptcy* rose quite considerably last year.

URL: [www.google.com/trends](http://www.google.com/trends)

**GOOGLE INSIGHTS FOR SEARCH**  
Google Insights for Search is another tool for observing keyword search trends since 2004. If you were trying to monetise *surfboards*, for example, you'd be pleased to know that Australia has the most searches in the world, followed by New Zealand and the United States. The bad news is that *surfboard* searches have been declining steadily each year and in theory

should stop completely within the next five years. Somehow I can't accept this, which suggests that all such findings should not be taken too literally.

**7** You can explore related search terms and drill down any or all of them. It lists rising searches—in our example, *bing surfboards* are much more popular than *surftech surfboards*.

These Google tools are not useful with obscure searches that don't have sufficient search volume.

URL: [www.google.com/insights/search/#](http://www.google.com/insights/search/#)

## GOOGLE SEARCH-BASED KEYWORD TOOL

As if there aren't enough keyword tools from Google, the Search-Based Keyword Tool is for web site owners who already have a Google AdWords search advertising campaign. You are required to log into the AdWords account and the tool finds keywords that you are not using in your campaign.

These are based on search volumes for those suggested keywords. Each is linked to its Google Insights so that you can study its search interest over any period since 2004.

URL: [www.google.com/sktool/#](http://www.google.com/sktool/#)

## CLUSTY

**8** When researching an unfamiliar niche, Clusty can help by showing clusters of concepts similar to your search. This could help you to plan the structure of the web site or give you more ideas to explore later.

URL: <http://clusty.com>

## KEYWORDSPY

**9** KeywordSpy is a free online tool with paid options that lets you examine more than 10 keywords. Their main market is the PPC advertiser who would like to know what keywords are being targeted by competitors. The tool is particularly useful to affiliate marketers and professional SEO/PPC agencies.

URL: [www.keywordspy.com/](http://www.keywordspy.com/)

There are many other tools that you could try but the key is not to draw hasty conclusions from the results. Take your own measurements as a sanity check and if they agree with the tool's findings, you can get on with the essential task of keyword research.

Next month we will take an in-depth look at link building and some new tools. **107**





# business pro

I.T. IN A SMALL-TO-MEDIUM BUSINESS

IN THIS  
SECTION

APC's **James Bannan** takes on the role of an SMB IT manager tasked with rolling out Windows 7.

IT  
MANAGER



JAMES  
BANNAN

James Bannan is a systems manager at St Leonard's College (Vic) and APC's resident Windows expert.

## PART 4 WINDOWS 7 SMB DEPLOYMENT

# Windows 7 SMB deployment

In this part we look at using PowerShell to manage Windows 7.

As you progress with Windows 7 testing and deployment, you'll have noticed that PowerShell crops up quite a lot. What is it? PowerShell is a management and automation engine that consists of a command-line shell and a scripting language. It's built on top of the .NET Framework and also provides access to the Component Object Model (COM) system as well as Windows Management Instrumentation (WMI) on both local and remote systems.

OK, that's great, but what does it mean for you as a Windows administrator? Well, PowerShell allows you to gather rich information and manage your Windows environment — client machines, servers, applications and Active Directory — in an extremely flexible and powerful way. It's also bundled into pretty much every Microsoft product rolling off the production line. For example, the WAIK and MDT 2010 tools that we've been using to deploy Windows 7 leverage strongly off PowerShell (particularly MDT 2010), and additionally, applications like SQL Server 2008, Exchange 2007 and System Center Virtual Machine Manager 2008 R2 are all manageable via PowerShell, which gives you an unprecedented ability to unify your management environment.

PowerShell has actually been around for some time [it was first shown to the developer community in 2003] but it's taken some time to make an impact with IT pros. Its first inclusion in an OS was with Windows Server 2008, where PowerShell 1.0 was an installable feature and available as a download for Windows XP/Server 2003/Vista. PowerShell 2.0 is included with both Windows 7 and Server 2008 R2.

Sound good so far? Of course. But here's the bitter pill — PowerShell is much easier to use if you have some sort of coding experience or are familiar with programming languages. If, like me, your early Windows days were spent tweaking system memory so that you could play that latest game, then diving into PowerShell can be something

of a rude shock. It is worth it though. Because PowerShell has a consistent presence across the Windows platform, it's really worthwhile getting to grips with because, as you'll see, it can be harnessed to do some really cool tricks that will make your life easier.

### GETTING STARTED

If you're running Windows 7 then you've already got PowerShell 2.0 installed and active. If not, download and install the latest Windows Management Framework from <http://tinyurl.com/yfvtbttg>, which includes PowerShell 2.0. To launch a shell window, simply go Start > Run > powershell.

The shell looks very similar to a standard command window, except the path has a 'PS' prefix and the window icon is different. In the window path you'll notice that the PowerShell executable has been launched from %SYSTEMROOT%\System32\WindowsPowerShell\v1.0. Don't think that this means you're running an earlier version of PowerShell — this path just maintains backwards compatibility. To see which version of PowerShell you're running, type 'get-host' in the shell and it will return some system information including the version. If you need to check the version outside of a shell window, open the registry with 'regedit' and navigate to HKLM\SOFTWARE\Microsoft\PowerShell\1\PowerShellEngine and check out the 'PowerShellVersion' string.

The shell window functions very much like a normal command window, and many of the standard commands like DIR, CD, IPCONFIG and CLS work as usual. UNIX-type commands like LS also work. PowerShell commands are handled by cmdlets (pronounced "commandlets") which are pre-configured .NET classes designed to perform a particular function. There is quite a decent embedded help feature, which you can access by typing in 'Get-Help'. A good way to get started is to type in 'Get-Aliases'. This displays all the aliases for the available cmdlets,

## WHAT YOU'LL NEED

The sections covered in this article show from last month's, in that they assume that you have access to a workstation with MDT 2010 and the Windows Automated Installation Kit (WAIK) already installed. You also need to have created a deployment share, imported an operating system and created a deployment task sequence.

## Script Center

Home

Library

Learn

Downloads

Scripts

Forums

Script Center &gt; Learn &gt; Scripting with Windows PowerShell

## Scripting with Windows PowerShell

This page brings together resources for system administrators who are interested in learning about the Windows PowerShell command line and scripting environment. Please let us know how we could make the site more useful for you.

Microsoft TechNet is the best place to get started with PowerShell.



## Hey, Scripting Guy!

Read an archive of the Scripting Guys' answers to customer-submitted questions about Windows PowerShell. Click the More Windows PowerShell Blog Posts link to see all the Hey, Scripting Guy! Windows PowerShell blog posts.

- Hey, Scripting Guy! Tell Me About Modules in Windows PowerShell 2.0
- Hey, Scripting Guy! Quick-Hits Friday: The Scripting Guys Respond to a Bunch of Questions (1/15/09)
- Hey, Scripting Guy! How Can I Create a Windows Visio Drawing of My Workstations' Disk Subsystem?
- Hey, Scripting Guy! Can I Use WMI and Windows PowerShell to Make a Microsoft Visio Drawing?
- Hey, Scripting Guy! Can I Make a Microsoft Visio Drawing with Network Shapes and Symbols?
- Hey, Scripting Guy! Is It Possible to Automate Microsoft Visio?
- Hey, Scripting Guy! Quick-Hits Friday: The Scripting Guys Respond to a Bunch of Questions (1/8/09)
- Hey, Scripting Guy! How Do I Add Help Information for Windows PowerShell Parameters?

More Windows PowerShell Blog Posts



## Scripts

Windows PowerShell Script Repository

Browse a repository of sample Windows PowerShell scripts.



## Scripting Guide

- Windows PowerShell Owner's Manual  
Here's the guide for learning Windows PowerShell from the ground up.
- VBScript to Windows PowerShell Conversion Guide  
Are you a VBScript script writer looking to try your hand at Windows PowerShell? Then you might want to take a look at our conversion guide which shows you how to replicate VBScript functions and methods in Windows PowerShell.
- A Task-Based Guide to Windows PowerShell Cmdlets  
This guide focuses on the tasks you can carry out using cmdlets. Read and write text files, manage event logs, sort data, and much more.



## Hands-On Scripting Labs

simultaneously presenting you with a list of cmdlets, which is useful. To get help about a specific cmdlet, for example Get-Childitem (which is also the LS command), type in 'Get-Help Get-Childitem'. This gives you a description of the cmdlet, links to the online help and related cmdlets. You can also type in 'Get-Help Get-Childitem -examples' for some examples of usage and syntax.

Although the cmdlets use upper and lower case, PowerShell is actually case-insensitive. You can also use the TAB key to autofill a command or scroll through the available options. For example, type in 'get-h' and then hit TAB a few times, and the command will scroll through the available cmdlets that begin with 'Get-H'.

## PIPING MULTIPLE CMDLETS

PowerShell cmdlets can be strung together into longer queries, and information gathered by one cmdlet can be piped to another for further manipulation. This logic lets you as an administrator gather the information you're interested in and present it in a useful format. A good example to illustrate this is to gather information about the files and folders in a specific directory. Normally you'd use the DIR command, using option-based switches like

'DIR \*.\*'. With PowerShell you could type in 'Get-Childitem \*.docx' or 'ls \*.docx'. To search the current path and all subfolders, type in 'Get-Childitem . -include \*.docx -recurse'. Assuming there are documents available, this command will produce a result, but the output can be quite messy, especially if there is a large number of results returned.

To start changing the way in which you receive results, try piping the command to another cmdlet, in this case Select-Object. Try 'Get-Childitem . -include \*.docx -recurse | Select-Object name'. The '|' symbol serves as a break in the query, takes the output produced by the first cmdlet and then pipes it to the next one. In that example, the Select-Object cmdlet took all the Get-Childitem results and extracted all the name information, so that the results just returned the filenames.

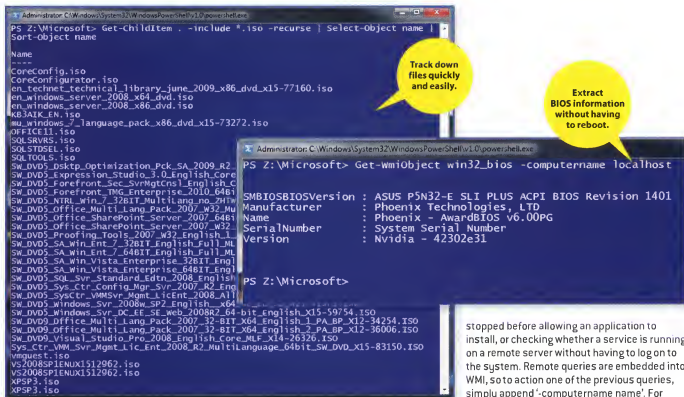
Taking it a step further, type in 'Get-Childitem . -include \*.docx -recurse | Select-Object name | Sort-Object name'. This takes the previous output and sorts it alphabetically, whereas 'Get-Childitem . -include \*.docx -exclude h\*.\* -recurse | Select-Object name | Sort-Object name' is the same as the previous query, but will exclude all files beginning with H. Additionally, '(Get-Childitem . -include \*.docx -recurse).count' gives you a count of all the

results instead of returning the actual names.

Finally, for something a little more sophisticated, try out 'Get-Childitem . -include \*.docx -recurse | Sort-Object name | Format-Table name,length', which outputs the results as a table with the name and length of each file, but sorted by name. For more permanent queries, you can also output the results to a text file, HTML, CSV or XML.

Because PowerShell integrates at many levels, cmdlets like Get-Childitem aren't just restricted to browsing the file system. Type in 'Get-Childitem registry:\hklm\SOFTWARE' and PowerShell will return the keys which exist at that level of the registry. Use the TAB key and the command will scroll through all the available options as if you were navigating any old file/folder structure. Because PowerShell can read the registry in real time, you can even make use of the New-PSDrive cmdlet to map a drive to a registry hive.

As you can see, even basic PowerShell functionality is pretty powerful, but before you can make use of all the options, you need to know what's available. Again, the help function is the place to look. As an example, 'Get-Help Sort-Object -full' gives you the full range of options for the Sort-Object cmdlet and how to use them. As there is too much information



to fit into one shell window, use Help instead of Get-Help, and the results will be broken up over multiple pages.

## VARIABLES

When you're working with long queries, it can be cumbersome to have to re-type them each time. The shell session does maintain a command history, which you can scroll through using the up and down keys, but another useful trick is to create variables.

Variables are session-specific commands that let you arbitrarily define a query for later use. For example, the queries in the previous section were all variations on the initial search for DOCX files using the Get-Childitem cmdlet. Given that, it makes sense to define the initial search as a variable, and then call on that variable in subsequent queries. To do this, use the following command '\$search=Get-Childitem -include \*.docx -recurse'.

This creates a query that you can call any time simply using \$search. Now you can re-type one of the more complex queries, for example '\$search | Sort-Object name', or '\$search.count'.

Entering the variable name at any time returns the results of whatever query has been assigned to it. This is useful if you need to check that the original query actually did return something — it can be frustrating when troubleshooting a complex query, only to find that one of the variables in use was set up incorrectly. You can overwrite a variable

simply by assigning a new query to the same variable name.

Although there are some reserved variables such as \$psHOME and \$profile, you can create as many session variables as you like and chain them together across multiple queries, which can be a very flexible way of massaging data across different cmdlets. However, once you have run a saved PowerShell script or shut down a shell session, user-defined variables are flushed from memory.

## WMI AND REMOTE MANAGEMENT

Because of its ability to use WMI classes, PowerShell lets you gather machine-specific information about local and remote systems and make certain changes. As an administrator this can be particularly useful — for example, you can query servers and extract BIOS version information, see which services are running (and restart them) or see which users are logged onto remote machines.

The Get-WmiObject cmdlet (alias is gwmi) handles WMI calls in PowerShell. Try some basic commands like 'Get-WmiObject win32\_bios' to extract the BIOS information of the local machine, and combine with another cmdlet to get only the version data using 'Get-WmiObject win32\_bios | Select-Object SMBIOSBIOSVersion'. To see which services are running, use 'Get-WmiObject win32\_service -filter "state='running'" | Select-Object name'.

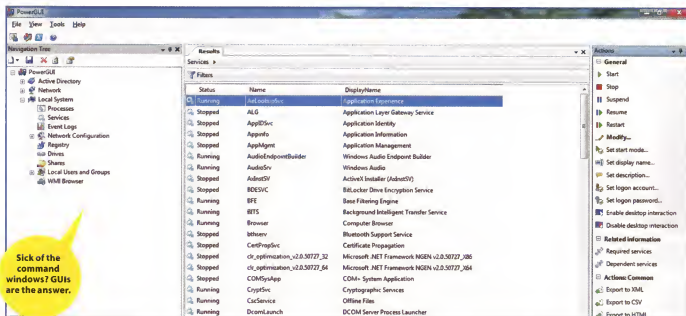
These queries can be used in all sorts of scenarios, such as verifying a service has been

stopped before allowing an application to install, or checking whether a service is running on a remote server without having to log on to the system. Remote queries are embedded into WMI, so to action one of the previous queries, simply append '-computername name'. For example 'Get-WmiObject win32\_bios -computername server001'.

When performing remote queries, system authentication and access rights come into play — you have to have rights over the remote system, or at least know the credentials of an account which does. If the previous script was run against a system to which the user logged on to the workstation did not have rights, PowerShell would return an access denied error message.

Fortunately, PowerShell lets you specify alternative credentials using the -credential switch 'Get-WmiObject win32\_bios -credential SERVER001\Administrator -computername server001'. You will be prompted for the appropriate password as PowerShell does not allow you to store passwords in a script, as this is a major security risk. However, if you want to do a lot of work on a remote system using another account, the best method is to save the credentials as a variable: '\$cred=SERVER001\Administrator', type in the password when prompted, and then simply call the variable 'Get-WmiObject win32\_bios -credential \$cred -computername server001'.

In addition to credential, firewall policies come into play as well. When making remote queries against a Windows system, particularly Vista/Server 2008 or later systems, the appropriate firewall policies have to be enabled. This is less of an issue in an Active Directory environment, where firewall and server security policy tends to be centrally controlled, but it is a definite issue in a



workgroup environment, where individual systems are set by default to essentially trust nothing else on the network.

You can combine WMI and standard PowerShell cmdlets in the same query, so it would be possible to run the filesystem and registry queries we were running previously against a remote machine.

The query would be structured as follows: 'Get-WmiObject -class CIM\_Datafile -filter "extension='docx'" -computername SERVER001'. To return just the base filenames, pipe the query to 'Select-Object name' or, using more WMI, define the original query as a variable (\$query, for example) and then type in '\$query | ForEach-Object { Write-Host \$.Name; }'. The Write-Host command is like the ECHO command in DOS — whatever comes next is output to the screen.

Of course, unlocking the power of WMI and PowerShell does rather depend on knowing what your options are. The Microsoft MSDN Library (<http://tinyurl.com/yevdaqa>) has a full WMI Reference catalogue detailing all the

available WMI classes, which is more than enough to keep anyone busy.

## GETTING STARTED AND FINDING HELP

Hopefully this article has convinced you that as a Windows administrator, PowerShell is something to get excited about. Having said that, for non-programmers like me, the world of scripting logic can be daunting, so it's good to know where to go to get your skills up and running, and where to go when you get stuck.

PowerShell has an incredibly rich partner and developer community, so there's plenty of information out there. In fact, possibly a bit too much... it can be bewildering at times. However, if you have a particular problem or you're trying to achieve a particular outcome, online searches will more often than not produce a result. After all, there are many admins out there trying to achieve similar things. From experience, to get the best results use cmdlet and class keywords in the search.

Microsoft TechNet and MSDN are very rich sources of information and help, including code

snippets that you can pull apart and customise. The Microsoft Script Center [part of TechNet — <http://tinyurl.com/me2915>] has a large repository of pre-built code, hands-on virtual labs, community links, cheat sheets and links to books and more documentation. It's also worthwhile joining an online community group like [powershellcommunity.org](http://powershellcommunity.org), tracking down local user groups like the Australian PowerShell User Group, and searching online for some dedicated PowerShell blogs by developers, admins and PowerShell MVPs.

Often, learning a new technology is much easier with a graphical interface, and PowerGUI from Quest is a great place to start, as it lets you build PowerShell scripts easily and provides easy access to explore cmdlet options [it's also free, which helps].

In the next issue, we'll look at other free tools that Quest offer to make managing a Windows environment much easier with PowerShell, as well as looking at some of the other management tools available to help administer your Windows 7 environment. **ETC**

# www.gamedude.com.au

## THE BEST BRANDS, THE CHEAPEST PRICES

CORSAIR  
Extreme X128

**\$569\***

G.SKILL Twin Pack  
RIPJAWS

**\$169\***

G.SKILL 128GB  
FALCON

**\$479\***

SAPPHIRE HD5850 1GB  
GDDR5 Dual DVI / HDMI

**\$429\***

PH: 07 3387 1500

3353 Pacific Hwy Springwood, QLD

\*Prices updated daily. Please check website for latest deal.



### TOMTOM CAR KIT FOR IPOD TOUCH

Now you can have a TomTom in your car without buying a TomTom. Well, not a traditional GPS anyway. You can now turn your iPod touch into a full functioning TomTom GPS device by purchasing the TomTom Car Kit for \$129. The Kit includes an iPod mount, a car charger and the TomTom navigation app [v.1.2] to get you going. Once set up,

users will have access to all the popular TomTom features such as TomTom IQ Routes, advanced lane guidance, spoken street names as well as emergency info and speed camera locations. Oh, and just in case you were wondering, you can still access your iPod's music via the TomTom's menu. Ahh, heaven. **CZ**

CONTACT TomTom  
ONLINE [www.tomtom.com](http://www.tomtom.com)  
PRICE \$129 for app and car kit

### RAVON AUDIO i231 ALARM CLOCK

Looking more like a stereo from the '70s with its stainless steel fascia and big volume dial, Ravon's i231 offers more than retro good looks. It features a built-in alarm clock which enables users to wake up to their favourite tunes by setting the alarm time and track.

A good-sized LCD screen makes navigation easy, whether it be accessing your iPod's playlists or tuning in a station on the FM radio with ten preset memory capability. With 20 watts RMS of power, the sound is good for its size. The fact that the speakers are housed in a wooden enclosure helps the sound quality and boosts the bass. Now we just need to agree on what to listen to. **CZ**

CONTACT Ravon Audio  
ONLINE [www.audio-inn.com](http://www.audio-inn.com)  
PRICE \$329.95

### CYBER SNIPA SILENCER

Gaming is a serious business that requires the right gear. The Silencer from Cyber Snipa is designed to be fully customisable for each user and each gaming situation. Up to 63 commands are recordable onto 9 gaming buttons to provide the user with up to seven separate gaming profiles.

An adaptable weight system allows users to adjust the weight and balance of the mouse by removing one or more of the 6 built weights. Plus, the ergonomically designed interchangeable right hand support provides a good surface to grip and is very comfortable to hold. This should help avoid the inevitable hand cramps after hours of online gameplay. **CZ**

CONTACT Cyber Snipa  
ONLINE [au.webstore.cybersnipa.com](http://au.webstore.cybersnipa.com)  
PRICE \$120

### BOOGIE BOARD LCD TABLET

Video killed the radio star, now LCD tablets have killed the chalkboard. Using the same Electronic Ink Technology as seen in eBook readers such as the Kindle, the Boogie Board is a 8.8 x 5.6in writing board which has its sights set on replacing notepads.

The Boogie Board is a power friendly device that uses no power to write or draw, it only uses a small charge [via a watch battery] to 'wipe' the screen. The pressure sensitive, flexible panel incorporates a reflective layer which aids in visibility and does away with the need for a backlight, hence the power savings. We don't know if it will replace pen and paper but for only US\$30 it is pretty cool. **CZ**

CONTACT Kent Displays  
ONLINE [www.kentdisplays.com](http://www.kentdisplays.com)  
PRICE US\$30





## MADE FOR iPad

### ILUV FABRIC CASE WITH CLIP — iPad

The iLuv range has always been big supporters of everything Apple makes (as well as other handheld devices), so it comes as no surprise to see it has a range of iPad sleeves and covers ready to hit the shelves in time for the iPad's release. First off, we have the aptly named 'Fabric case with Clip', which is custom made to wrap around your iPad ensuring dust, minor impact and scratch-free protection. Made from durable fabrics and available in a choice of colours, the Fabric case also includes a screen protector to ensure that your valuable iPad touchscreen remains in perfect condition. For less than \$50, it's a good investment. **CZ**

CONTACT iWorld  
ONLINE [www.iworldaustralia.com.au](http://www.iworldaustralia.com.au)  
PRICE \$49.95

### STM SCOUT EXTRA SMALL

STM has jumped on the iPad bandwagon by introducing a range of notebook cases and shoulder bags that are suited for the iPad. These are cut down pre-existing lines of notebook bags and sleeves that have the perfect proportions for lugging around an iPad. The best of which is the Scout extra small. With high-density padding and a cushioned felt lining to surround and protect your iPad, the Scout also has plenty of extra space for all your other gear. The Scout offers sealed pockets with velcro closures and a large buckle for securing bulky goods. As well as looking good, the Scout is also comfortable to carry. Now all we need is an iPad. **CZ**

CONTACT STM  
ONLINE [www.stmbags.com](http://www.stmbags.com)  
PRICE \$79.95

### APPLE iPad KEYBOARD DOCK

One of the first complaints that arose when the iPad was announced was how awkward it would be to type using a touchscreen. Apple seemed to have thought of this complaint ahead of time and released a keyboard dock on the same day it announced the iPad. The

Keyboard Dock is both a dock for charging your iPad and a full-size keyboard. The dock has a rear 30-pin connector, which lets you connect to an electrical outlet using the USB power adapter, sync to your computer, and use accessories like the Camera Connection Kit. An audio jack lets you connect to a stereo or separate powered speakers for better sound. **CZ**

CONTACT Apple  
ONLINE [www.apple.com](http://www.apple.com)  
PRICE US\$69

### NEOPRENE SLEEVE FOR iPad

If lugging your iPad around in a squishy websuit-like sleeve is your idea of cool, then the 'Neoprene sleeve for iPad' is just the thing. Available in a range of colours and patterns from the suave to the down-right girly (see above) these Neoprene sleeves are designed to be resistant to rain and minimal amounts of water while also protecting your gear from minor shocks and bumps. The inside has a smooth finish to protect your iPad screen from scratches, while the exterior contains multiple pockets for carrying your phone and other gadgets. Although not as rugged as a full-sized bag, these sleeves do offer extra layer of protection. **CZ**

CONTACT iWorld  
ONLINE [www.iworldaustralia.com.au](http://www.iworldaustralia.com.au)  
PRICE \$29.95

## Inprint

Tech books



\$45

### 7 DEADLIEST NETWORK ATTACKS

elsevierdirect.com

This book pinpoints the most dangerous hacks and exploits specific to networks, laying out the anatomy of these attacks including how to make your system more secure. You will discover the best ways to defend against these vicious hacks with step-by-step instructions and learn techniques to make your computer and network impenetrable.



\$68

### INTRODUCING ZBRUSH 4

www.wiley.com.au

Introducing ZBrush 4 helps you to learn the ZBrush basics to help you get comfortable sculpting in a digital environment with this relaxed, friendly and thorough guide. Soon you'll be creating realistic, cartoon and organic models using meshes, organic sculpting, hard surface sculpting, textures, lighting, rendering and scripting.

## Edifier On the Go IF350

The ghetto blaster for the twenty-first century!



\$199

8  
10

With the aid of a rechargeable battery source, Edifier gives its new IF350 iPod/iPhone dock the ability to hit the town with you. Reminiscent of the days of old, you can sling this baby over your shoulder and strut to your favourite tunes, but with 15 hours of listening time from one charge, we recommend a rest break at some point. The IF350's two 3in speakers have good tonal range and bass depth considering their size. Even the FM radio reception we picked up in the park sounded clear and sharp. A foldaway dock and a protective pouch make this a truly portable entertainment system. It's time to hit the beach! **CZ**

CONTACT Edifier  
ONLINE www.edifier.com  
PRICE \$199

## BLU-RAY PICKS OF THE MONTH

### 2012



The end of the world has never looked so good! Based on theories surrounding surmised events, supposedly believed to occur when the Mayan calendar expires less than three years from now, *2012* sees the world torn apart by a rapid heating of the planet's core. When the Earth's crust starts to split, dumping whole cities and their inhabitants into gaping holes in the Earth, you can't help but feel awestruck, and a little bit nervous, at the realism depicted by the imagery on-screen. At nearly three hours long, *2012* is a film that will keep you so engrossed that you won't even notice your bum going numb. **CZ**

CONTACT Sony Pictures  
ONLINE www.sonymovies.com.au  
PRICE \$42.95



### ASTROBOY

Created in the early fifties by Japanese artist Osamu Tezuka, Astroboy makes his big-screen debut in this slick adventure that breathes new life (pardon the pun) into this popular character. *Astroboy* is a surprisingly sad story of a robotic scientist (Nicholas Cage) who's son Astro dies in a work-related accident. Stricken by grief, he builds a robotic version of his son which comes fully loaded with weapons and defenses to ensure that no harm can come to him. Although made for kids, *Astroboy* has many dark elements intertwined with the comic action that will keep both adults the kids entertained. **CZ**

CONTACT Sony Pictures  
ONLINE www.sonymovies.com.au  
PRICE \$42.95



### PARANORMAL ACTIVITY

It's good to see a film of this genre that doesn't rely on blood and gore to engage the audience. *Paranormal Activity* is a rare horror film that is actually scary. It's a simple story in which a young couple find themselves being haunted by a demon which has followed Katie since childhood. In order to document these strange events, her partner, Micah, decides to set up his camcorder near the bed to find out what's going on. Shot in the same style as *Blair Witch* and *Cloverfield*, this documentary style gives *Paranormal Activity* a sense of reality that increases the film's tension and terror. Watch it with the lights on. **CZ**

CONTACT Icon Pictures  
ONLINE www.iconmovies.com.au  
PRICE \$34.95

## Quikfix

New releases

### GTA: EPISODES FROM LIBERTY CITY

Rockstar is giggling its silly, over-the-top ass all the way to the bank with the infinite potential for stories out of Liberty City. \$69.95 lets players once again take to the sordid streets of Liberty City in two (one old, one new) stories. The Lost and Damned shows players the bleak and depressing life of a 1%-er while The Ballad of Gay Tony is a sequined romp through the perils of nightclub ownership, drug use and crime in the modern age. Fantastic, darlings.



#### ON THE LEVEL

The new Skirmish system is a treat, but there are still a few flaws in LOTR land.

## LOTR Online: Siege of Mirkwood

Troy Coleman shall not pass... the level cap.

Love them or hate them, MMOs are such a beautiful business model; a subscription-based product whereby players can sink unholy hours of their lives incrementally improving characters that exist solely in a virtual environment. WTB stocks?

Turbine's officially licensed Lord of the Rings Online has, in the past two years, developed and maintained a reasonably healthy share of the online marketplace and has just brought the second paid-for expansion to the table.

Everything you'd expect from an expansion is there; a level cap increase from 60 to 65 (in around 9 or 10 hours), new superb-looking landscapes, ample

quests, deeds, traits and titles. For the raiders, there are three new three-person and a six-person instance that gate into a multi-boss twelve-person raid. As I mentioned, everything you'd

expect. What is new, and super cool, is the Skirmish system. Players can create, tailor and improve their own personal 'soldier' — customised to a basic version of the healer, tank, archer or buffer classes — which can then be used to participate in private instances for barterable rewards.

One thing that is slightly concerning for the longevity of the game as a whole is the failure to address population problems and imbalance in the starter regions. What this does is develop a solo mentality in players early on which generally doesn't change in later levels. Turbine needs to maintain a multiplayer/grouping mantra.

#### AVAILABLE PLATFORMS

##### PC-DVD

- CONTACT Turbine
- ONLINE [www.lotro.com](http://www.lotro.com)
- PRICE US\$20 plus subscription
- ✓ Level cap increase; Skirmish system is great.
- ✗ Level cap is easily reached in a matter of hours.

#### VERDICT ★★★★★

## Videomate HD Experience, Simply Brilliant

### IP70 Network Camera

- Day and night functionality for any lighting condition
- High Quality Megapixel HD Image
- H.264, MPEG-4 and MJPEG compression
- Smart motion detection without risk
- Built-in MIC/Speaker to Capture/Send suspicious voice
- Monitor from 3GPP & iPhone/BlackBerry mobiles
- 32 channels ComproView™ bundled
- MicroSD card slot for local snapshot storage



■ Wireless upgrade module available

### IP540 Network Camera

- Pan/Tilt with 4x digital zoom
- Day and night function, operates under all light condition
- Supports Dual H.264, MJPEG or MPEG-4 video streams
- Supports dual streams simultaneously
- Two way audio with built-in MIC
- Support UPnP (Universal plug and play)
- Supports local storage (MicroSD)
- Bundle with powerful 32-channel IP video management software



■ Wireless upgrade module available

### VideoMate E750

- PCIe interface & certified with Windows7
- Dual tuners for DVB-T TV reception
- PIP/POP feature up to 5 TV windows watching
- S5 mode Power Up scheduled recording
- Windows Media Center remote control



downtime • featured game

## Indepth

Ezio Peazio

### HIDING IN PLAIN SIGHT

Evasion and hiding in plain sight have always been a prominent key to success in Assassin's Creed. The problem was that apart from environmental features like hay bales and seats, the remainder of the game world might as well have been pure decoration. Enter courtesans and local thieves. For a modest fee, these beauties and hoodlums serve as an on command distraction and means for Ezio to slip through/away undetected. On the 360, there's an Achievement for reaching a certain amount of money spent on courtesans, so be sure to treat Italy as your personal red light district.

### THE VILLA

Early on in the game, Ezio makes his way to the Auditore family Villa, which has seen better days. Serving somewhat as a base of command, players can sink hard-earned Florins into the rehabilitation and restoration of the small town. Doing so earns Ezio discounts in the local stores as well as attracting tourism, which in turn makes more money... to spend on courtesans.

### SANDBOX SUPREME

The core gaming experience hasn't been changed too much, but a number of improvements have been made.



### TIME TO DANCE

"Stop! They're not spirit fingers! This is what I call spirit fingers!"

# Assassin's Creed 2

There's nothing up **Troy Coleman's** sleeve.

It's been a couple of years since Desmond Miles parkoured and stabbed his way through medieval past lives as the assassin Altaïr ibn La-Ahad. And while I may have been a little harsh with my review two years ago, I'll feverishly maintain my stance on two specific issues: jumping back and forth from the past to the present never seemed to gel, and the fact that the end of the first Assassin's Creed was rubbish.

Patrice Désilets (Ubisoft Montreal Creative Director) and his code monkeys have unleashed another round of Assassin's Creed and for the most part, it's exactly the same as the first. This time Desmond discovers he has more than one Assassin past life and jumps into late 14th century Renaissance Italy as the petulant,

rich and arrogant Ezio Auditore da Firenze who sparks up a spate of revenge killings in the name of his family. The core gaming remains exact: Ezio is more or less free to roam and explore the unbelievably stunning renaissance landscape at will and, as with all other sandboxy games, pick and choose which missions and side objectives to do along the way. What has evolved and excelled is the way the player interacts, blends and moves through the landscapes — especially crowds (see sidebar).

There are several historical characters to meet along the way too, most notably Leonardo da Vinci, who acts somewhat as a confidant to Ezio as well as an Italian Renaissance version of 007's gadget guy 0.

Aside from the camera perspective

being annoyingly locked when in some confined spaces, there really isn't much in the way of technical faults to pick at in AC2. The sheer scale and absolute beauty of the game glazes over even the most critical eyes. This is what Assassin's Creed 1 should have been. Jump in, explore and enjoy.

#### AVAILABLE PLATFORMS

PC-DVD

PS 3

XBOX 360

CONTACT Ubisoft Montreal

ONLINE assassinscreed.us.ubi.com

PRICE \$109.95



Stunning landscapes; blending and environment cohesion improved.



Some horrible forced camera angles in confined spaces.

VERDICT

★★★★★





# chipchat

BY PETER DOCKRILL

## Re: FUIs, fyi

Ever wanted to know what the user interfaces of the future will look like, say, in ten, twenty or fifty years? The place to look is the movies, specifically, sci-fi movies. Think about it: whenever future cop is trying to track down future villain, what is he using? Inevitably, the answer is: future computer. Now one interesting fact about these fictional, futuristic OSs (as seen in movies like *The Island*, *Mission Impossible 3*, *Children of Men* and many more) is that a lot of them were designed by one fellow: Marc Coleran, a visual designer who specialises in FUIs or "fantasy user interfaces". His blog at <http://tinyurl.com/ygmb7ei> shows off more of his work, and you can read more here: <http://tinyurl.com/yf36rom>. And while we're on the topic: anybody noticed how similar the iPad is to the tablet thingles the crew carry around in *Star Trek*?

### ITREK?

Meet movie computer UIs won't be seen in reality — although the iPad, in real life, strongly imitates Trekkie art...



**LET'S GO LEGO**  
Building up your MMORPG guild has never been more literal. Grab your Lego blocks and hop to it.

## Lego of your inhibitions!

Lego has undergone an interesting metamorphosis in the past decade or two: one which has taken it from the humble plastic building-block toy (with which every child is familiar) into some techno-fused, CGI-prone, gaming-focused, irony-laden future brand. The inevitable result of this development? Lego Universe. Scheduled to launch in the second half of the year, Lego Universe is a Lego massively multiplayer online game — basically it's a virtual Lego sandbox for ages eight and up. If you're considering defecting from WoW or LOTRO for a little brick-building time, bear in mind the kid-friendly angle of the gameplay, evidenced neatly by this question from the Lego Universe web site FAQ: "Can my parents limit how I play in Lego Universe?"

### GIVES YOU WINGS

Gotta call to say you're late? Not to worry, drink your Red Bull better and fly there quick smart.

## Run out of fizz?

The imminent adoption of a singular, non-proprietary cross-industry power charger for mobile phones can't come soon enough for us — but if, in the meantime, you really can't wait for a ubiquitous energy source for your mobile, why not try a soft drink-powered battery? Chinese designer Daizi Zheng came up with this prototype concept for a Nokia phone that runs on sugary liquid: just pour some Coke in and you're done — and it's environmentally friendly to boot. Plus, to quote Zheng: "Bio-batteries are a whole new way of looking at batteries and afternoon tea." More at [www.daizizheng.com](http://www.daizizheng.com).



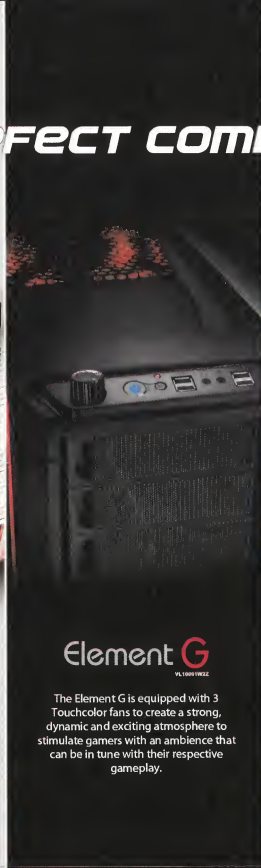
# THE PERFECT COMBINATION



## ISGC-300

CLP0539

The ISGC series of coolers take advantage of the specially designed 120mm fan that minimizes noise and maximises overall airflow. It supports all current processors such as the Intel Core™ i7 and all AMD CPUs.



## Element G

VL10001WZ2

The Element G is equipped with 3 Touchcolor fans to create a strong, dynamic and exciting atmosphere to stimulate gamers with an ambience that can be in tune with their respective gameplay.



## EVO Blue Series

Uniquely crafted power supply unit with multiple adjustable LED-Fan lighting effects for gamers and demanding case modders alike.

Express yourself.



**1JK**  
www.1jk.com.au  
02 9745 0677

**MWAVE**  
www.mwave.com.au

**TECHBUY**  
www.techbuy.com.au  
02 9648 1818

**COMPUTER ALLIANCE**  
www.computeralliance.com.au  
07 3421 3200

**PC SHOPPER**  
www.pcshopper.com.au  
07 3397 0777

**SMART**  
www.smart.com.au  
07 3369 3928

**ALL NEEDS COMPUTERS**  
www.allneeds.com.au  
08 8211 8661

**D'AMBRA COMPUTERS**  
www.dambra.com.au  
08 8252 6225

**LEADER COMPUTERS**  
www.leadersystems.com.au  
08 8112 6000

**PRINCIPAL COMPUTERS**  
www.taamianpc.com.au  
03 8235 5010

**XP MICRO**  
www.xpmicro.com.au  
02 9748 6439

**CENTRAL COM**  
www.centroom.com.au

**COMPUTER & PARTS LAND**  
www.cpl.net.au  
03 8542 8688

**SCORPION TECHNOLOGY**  
www.scorpiontech.com.au  
1300 726 770

**AUSTIN COMPUTERS**  
www.austin.net.au  
08 9201 2788

**PLE COMPUTERS**  
www.ple.com.au  
08 9309 4771

**NET PLUS**  
www.netplus.com.au  
08 9242 7286



# probox

FREEDOM IN ENTERTAINMENT



DIRECT INPUT  
RECORDING



SCHEDULED  
RECORDING



BITTORRENT  
DOWNLOADING



WEB/FTP  
ACCESS



EPG-BASED  
RECORDING



TIME-SHIFT  
RECORDING

Authorized Distributor for Australia  
PH: 1300 269 927

Anyware is a wholesaler and does not sell direct to public.  
The above products can be purchased from most independent computer dealers throughout Australia. Call the number above for your nearest reseller.

**Anyware**™  
COMPUTER ACCESSORIES  
[www.anyware.com.au](http://www.anyware.com.au)

## GAME SERIES



Blue LED 120mm Fans



Screwless Installation



Advanced Airflow Design



A1-G01



A1-G02



A1-G03



A1-G04



**NZ**  
**DFI Computers** 02 9607 9993 dyc.computer.com.au  
**F1 Tech Pty Ltd** 02 9621 8800 f1tech.com.au  
**UK International** 02 9145 0677 uk.com.au  
**TX Computer Solutions** 02 96400025 txcomputer.com.au  
**Q-L-D** 02 9575 4575 agcomputer.com.au  
**AD Computers** 02 3420 3200 computerlance.com.au  
**Computer Alliance** 02 9575 4575 dslwcoo.com.au  
**Delwood Memorial Beach** 02 3387 1530 gamadco.com.au  
**Game Dude Pty Ltd** 1300 789 522 pcgamer.com.au  
**PC Superstore** 03 9574 7855 bitronics.com.au  
**V112** 03 8542 8888 cpi.net.au  
**Bitronics Pty Ltd**  
**Computers & Parts Land**

**WA**  
**AdvancedNet** 08 9242 5930 advancednet.com.au  
**Computer Cosh & Derry** 08 9386 1202 cosh.com.au  
**Powercap Technology** 08 9331 3543 fpcap.com.au  
**Nepkua Micro Computer** 08 9242 7288 nepkua.com.au  
**Workwide Net Solution** 08 9275 9198 networld.com.au  
**SA**  
**Achard Computers** 08 8446 9450 achardnet.com.au  
**Assemble Computers** 08 8254 3822 assemblecomputers.com.au  
**NETS Systems** 08 8165 2114 nets-systems.com.au  
**PC Plus** 08 8262 7134 pcplus.com.au  
**ACT**  
**Principal Computers** 02 6225 2477 principalcomputers.com.au

08 9242 5930 advancednet.com.au  
 08 9386 1202 cosh.com.au  
 08 9331 3543 fpcap.com.au  
 08 9242 7288 nepkua.com.au  
 08 9275 9198 networld.com.au

08 8446 9450 achardnet.com.au  
 08 8254 3822 assemblecomputers.com.au  
 08 8165 2114 nets-systems.com.au  
 08 8262 7134 pcplus.com.au  
 02 6225 2477 principalcomputers.com.au

**TAS**  
**Tasmanian Principal Computers** 03 6225 5000 tasmanianpc.com.au  
**Taspro Computers** 03 6424 1991 taspro.com.au  
**AUCKLAND**  
**ETC Computers** 09- 8270488 etccomputers.co.nz  
**Gamarc Computers** 09- 377 2252 gamarc.co.nz  
**PC Force** 09- 579 2555 pcforce.co.nz  
**Smart PC Battery** 09- 273 5130 smartpcbattery.co.nz  
**XP Computers** 09- 629 9196 xpcomputers.co.nz  
**CHRISTCHURCH**  
**Orbits Computers** 03 343 3865 orbits.co.nz

03 6225 5000 tasmanianpc.com.au  
 03 6424 1991 taspro.com.au  
 09- 8270488 etccomputers.co.nz  
 09- 377 2252 gamarc.co.nz  
 09- 579 2555 pcforce.co.nz  
 09- 273 5130 smartpcbattery.co.nz  
 09- 629 9196 xpcomputers.co.nz

**ROTTERDAM**  
**X-Press** 07 345 0480 xpress.co.nz  
**WELLINGTON**  
**Fergus Computer** 04 9091581 ferguscomputers.co.nz  
**PC Fitch** 04 568 6885 pcfit.co.nz  
**Zone Systems** 04 566 0388 zone-systems.co.nz  
**WHANGAREI**  
**The PC Factory** 09 430 2253 thepcfactory.co.nz

07 345 0480 xpress.co.nz  
 04 9091581 ferguscomputers.co.nz  
 04 568 6885 pcfit.co.nz  
 04 566 0388 zone-systems.co.nz  
 09 430 2253 thepcfactory.co.nz



# Life is about great choices, ADSL or FTTH

**BiPAC 7800N** an all-in-one ADSL2+ Broadband Firewall Router with blindingly fast office network speeds and support for next generation Fibre-to-the-Home (FTTH) services.

## Check out some of the Features!

- 802.11n ADSL2+/Broadband Firewall Router with Gigabit Ethernet Switch
- Dual-WAN - ADSL2+ or Ethernet WAN for broadband connectivity
- 4-port Gigabit Switch for fast LAN transmission
- Draft-802.11n with WPA-PSK
- Wi-Fi Protected Setup
- Quality of Service
- Easy sign-on



Life is just too good to move out of home with Billion's BiPAC 7800N. Apart from using your ADSL line, the second Ethernet WAN port offers you a wider range of broadband choices like Fibre to the Home, Satellite or Cable connections. The power user and everyone else at home can enjoy online gaming, watching IPTV, buy music festival tickets or book a family outing at the same time using the same connection, shared via the BiPAC 7800N's 4-port Gigabit Switch or wireless-N connection.



Billion Electric Co., Ltd. (Tel: #3027), since 1973, is one of the leading providers of network equipment in the Asia Pacific region. For more information, please visit [www.billion.com.au](http://www.billion.com.au).

**PCRange**  
www.pcrange.com.au  
Tel: 08 8186 1800

**First International Trading Pty Ltd**  
[www.firstint.com.au](http://www.firstint.com.au)  
Tel: 02 9858 1720

**YCS** Ynot Computer Systems  
[www.ycs.net.au](http://www.ycs.net.au)  
Tel: 08 9330 7666

**BILLION** TM



**NEW**



**15.4" Nylon  
notebook Glove**  
NG15 **\$9.50**



**Keyboards**  
TK-102 PS/2 **\$13.00**  
TK-103 USB **\$15.00**

## TONNY Mouse Range

### USB Optical Mouse



HM-2025  
**\$10.00**

HM-2029  
**\$10.00**

HM-2086Y/R/G  
**\$10.50**

### PS/2 OR USB Optical Mouse

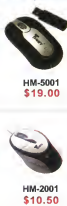


HM-2031  
**\$10.00**

HM-2002  
**\$12.00**

HM-5001  
**\$19.00**

### Wireless Optical Mouse



HM-5001  
**\$19.00**



Prico CD-R 52X 50min  
Portable 30pk  
CD-R950 **\$13.00**



Kington Compact Flash Card



Kington Security Digital Card



USB 2.0 Flash Disk Drive



SANDISK CRUIZER MICRO  
SDHS 2GB USB  
**\$12.50**



Seta 2.5" / 3.5" HDD Docking  
Station with USB Hub **\$36.00**



USB Portable  
Floppy Drive  
**\$21.50**



USB Sound Card  
**\$10.00**



10/100 Network Switch



SATA External  
HDD Case



24 in 1 Internal 3.5" Card Reader



Internal 5.25" Card Reader



Touch with  
14 LED Lights  
**4054 \$6.90ea**



Travel Adapter with Surge  
Protection



USB Keypad



24 in 1 USB 2.0  
Card Reader



USB 2.0 External  
HDD Case



Notebook Cooler Pad



USB to PS/2  
Splitter Cable



USB 2.0 to IDE/SATA  
Cable



Automatic Motion Sensing  
Night Light



Heart Shaped Comfortlite



Star Shaped Comfortlite



Electroluminescent Blue Night  
Light with Clock



Automatic Colour Changing Nightlight



Sharp Thermal Fax Rolls

Model	Genuine	TONNY
KX-FA54E	\$43.00	\$18 Twin Pack
KX-FA55A	\$43.00	\$19 Twin Pack
KX-FA134	\$62.00	\$35 Twin Pack
KX-FA136	\$83.00	\$26 Twin Pack

Model	Genuine	TONNY
Optra E/E+	\$142.00	\$59.00
E120 prebate	\$115.00	\$55.00
E210	\$162.00	\$49.00
X215	\$119.00	\$49.00
E220 prebate	\$135.00	\$79.00

Model	Genuine	TONNY
E230/232/330/332	\$129.00	\$55.00
E310/312 (3k)	\$185.00	\$73.00
E320/322 (3k)	\$162.00	\$82.00
E31/323 (3k)	\$162.00	\$85.00
X342n (2.5k)	\$145.00	\$69.00

Model	Genuine	TONNY
EPL-6700/5800	\$196.00	\$49.00
EPL-5900/6100	\$213.00	\$49.00
EPL-6200	\$183.00	\$49.00
AL-C900/1900BK	\$102.00	\$65.00
AL-C900/1900C/M/Y	\$122.00	\$65.00
AL-CX11N/C1100BK	\$107.00	\$39.00
AL-CX11N/C1100C/M/Y	\$164.00	\$39.00
AL-C1000/2000BK	\$124.00	\$99.00
AL-C1000/2000C/M/Y	\$249.00	\$115.00

All orders are subject to our terms and conditions of sale. Pricing and stock availability is subject to change at any time without notice. Please note that pictures and illustrations are for display only and that the final product may vary. All products, brand names, trademarks are owned by their respective companies.

**TEG Computers**  
Level 1, 19-21 Hunter Street  
Sydney NSW 2000  
Tel: 02 9223 2360  
Fax: 02 9223 5775  
[sales@tegcom.com.au](mailto:sales@tegcom.com.au)

**Adscroll Australia**  
Unit 18, 1 Short Street  
Chatswood NSW 2067  
Tel: 02 9882 1666  
Fax: 02 9882 2877  
[sales@adscroll.com.au](mailto:sales@adscroll.com.au)

**TEG Trading Hours**  
Monday to Friday  
10:00am to 6:00pm  
**Adscroll Trading Hours**  
Monday to Friday  
9:30am to 5:30pm

**USB Waterproof Foldable Keyboard, 104keys**  
**\$18.00 each TK-104**  
**USB Waterproof Foldable Keyboard, 84keys**  
**\$16.00 each TK-105**





All orders will be sent by Express Post!

For wholesale inquiries contact  
**ADSCROLL**  
**02 9882 1666**

**SALES: 02 9223 2360**

**Sales@tegcom.com.au** ALL PRICES INCLUDE GST

**Smudge tested under water for 36 hours**

### Create superior photo prints with your inkjet printer

- Glossy finish for true photo quality
- Compatible with all inkjet printers
- Bright white for high colour saturation
- Ideal for use with TONNY inks

#### Premium Photo Quality Paper

- 110gsm
- 100 sheets
- A4 (210x297mm)... \$8.50 TFP3811

#### Glossy Photo Paper

- 187gsm
- 20 sheets
- A6 (105x148mm)... \$3.90 TTP1846
- A4 (210x297mm)... \$8.70 TTP1811

#### Premium Glossy Paper

- 256gsm
- 20 sheets
- A6 (105x148mm)... \$4.70 TTP2946
- A4 (210x297mm)... \$13.90 TTP2811

\*Of equal value or less

### Epson Ink Cartridges

Model	Genuine	TONNY
T028	\$43.60	\$4.40
T039	\$39.10	\$4.90
T038	\$20.00	\$5.00
T039	\$28.40	\$5.60
T0461	\$22.00	\$4.50
T0472/3/4	\$14.90	\$4.50
T0491/2/3	\$21.00	\$4.50
T0494/5/6	\$21.00	\$4.50
T0621	\$22.00	\$5.20
T0631	\$16.00	\$5.20
T0632/3/4	\$15.20	\$5.20
T0731 BK (T0731)	\$17.00	\$7.40
T0731 CM/Y (T0732/3/4)	\$17.00	\$7.40
81N BK (T0811)	\$27.00	\$8.40
81N CM/Y (T0812/3/4/5/6)	\$27.00	\$8.40
S020089 / T052	\$35.10	\$4.80
S020093 / T050	\$29.00	\$4.80
S020187 / T050	\$28.00	\$4.80
S020189 / T051	\$32.00	\$4.80
S020191 / T052	\$34.00	\$4.80

### Lexmark Ink Cartridges

Model	Genuine	TONNY
18C0781A (#1)	\$36.90	\$24.60
10N0016 (#16)	\$49.30	\$18.40
15M0120 (#20)	\$63.60	\$24.00
10N0028 (#26)	\$53.00	\$23.00
18C0032 (#32)	\$36.90	\$21.30
18C0033 (#63)	\$39.80	\$23.10
18C0034 (#34)	\$41.60	\$25.00
18C0035 (#35)	\$49.30	\$27.00
12A1970 (#70)	\$55.90	\$21.00
18L0032 (#82)	\$50.20	\$26.10
18L0042 (#83)	\$62.60	\$23.90

### Brother Ink Cartridges

Model	Genuine	TONNY
LC-37BK	\$25.20	\$5.00
LC-37C/M/Y	\$16.60	\$5.00
LC-38BK	\$24.50	\$5.00
LC-38C/M/Y	\$15.90	\$5.00
LC-47BK	\$34.60	\$5.00
LC-47C/M/Y	\$20.80	\$5.00
LC-78BK	\$34.50	\$5.00
LC-57C/M/Y	\$20.80	\$5.00

### HP Ink Cartridges

Model	Genuine	TONNY
C87121WA (#02BK)	\$28.20	\$11.00
C871212/3/4/5WA (#02C/M/Y/LC/LM)	\$16.60	\$5.20
C87121AA (#27)	\$42.40	\$14.10
C4383AA (#1BK)	\$30.00	\$16.00
C3967/B/9A (#18C/M/Y)	\$23.50	\$16.00
C9351AA (#21)	\$24.00	\$16.00
C9352AA (#22)	\$27.30	\$21.00
C87121AA (#27)	\$28.90	\$14.10
C8728AA (#28)	\$33.00	\$22.00
51645AA (#45)	\$44.70	\$16.00
C6565AA (#56)	\$30.60	\$15.20
C6567AA (#57)	\$49.90	\$23.00
C6568AA (#58)	\$38.80	\$23.00
CC641WA/#60XLJ BK	\$45.00	\$27.00
CC644WA/#60XLJ Color	\$51.00	\$29.00
C9336WA/#74XLJ	\$44.80	\$26.00
C9338WA/#75XLJ	\$49.80	\$27.00
C6578DA (#78)	\$48.80	\$19.00
C9369A (#88 BK)	\$49.60	\$18.00
C93912/3/4/#88C/M/Y	\$36.40	\$14.70
C9362WA (#92)	\$23.30	\$14.70
C9361WA/#93	\$30.00	\$16.00
C8765WA/#94	\$31.30	\$16.00
C8766WA/#95	\$36.40	\$16.00
C8767WA/#96	\$44.00	\$16.00
C9363WA/#97	\$50.20	\$15.80
C9364WA/#98	\$52.00	\$15.80
C9369WA (#99)	\$37.80	\$25.00

### Samsung Color Laser Toner

Model	Genuine	TONNY
CLP-300A BK	\$9.00	\$2.00
CLP-300A CM/Y	\$8.00	\$2.00
CLT-409S BK for CLP-310/315, CLX-3170/3175	\$7.00	-
CLT-409S CM/Y for CLP-310/315, CLX-3170/3175	\$6.00	-
CLP-510D BK	\$153.00	\$92.00
CLP-510D CM/Y	\$171.00	\$92.00
CLP-600A BK	\$131.00	\$113.00
CLP-600A CM/Y	\$184.00	\$113.00

### HP Toner Cartridges

Model	Genuine	TONNY
C2610A	\$183.00	\$55.00
C6511X	\$316.00	\$69.00
C2612A	\$106.00	\$45.00
C2613A	\$109.00	\$45.00
C7115A	\$95.00	\$45.00
Q7516A	\$276.00	\$99.00
C4127X	\$194.00	\$59.00
C8435A	\$95.00	\$49.00
C8436A	\$107.00	\$49.00
Q1338A	\$235.00	\$85.00
Q5942A	\$226.00	\$95.00
Q5942X	\$343.00	\$105.00
Q5948A	\$109.00	\$49.00
Q5949X	\$201.00	\$55.00
Q7551X	\$330.00	\$76.00
Q7553A	\$123.00	\$49.00
Q7553X	\$227.00	\$59.00
C8061X	\$194.00	\$59.00
C4092A	\$90.00	\$45.00
C4096A	\$153.00	\$59.00

### HP Color Toner

Model	Genuine	TONNY
CB540A	\$109.00	\$7.00
CE4512/3A	\$99.00	\$7.00
CE4511A	\$116.00	\$7.00
CE4512/3A	\$126.00	\$7.00
Q960A/C9700A	\$126.00	\$5.00
Q9612/3A	\$151.00	\$5.00

### Brother Toner Cartridges

Model	Genuine	TONNY
TN-2025	\$86.00	\$49.00
DR-2025	\$156.00	\$62.00
TN-2150	\$88.00	\$49.00
DR-2125	\$156.00	\$69.00
TN-3060	\$123.00	\$49.00
TN-3185	\$128.00	\$49.00
TN-3290	\$159.00	\$49.00
DR-3215	\$215.00	\$69.00
TN-6600	\$117.00	\$49.00
TN-7600	\$122.00	\$49.00
TN-8000	\$47.00	\$16.00
TN-04BK	\$257.00	\$89.00
TN-04C/CY	\$257.00	\$89.00
TN-12BK	\$139.00	\$72.00
TN-12C/M/Y	\$281.00	\$105.00
TN-15BK	\$139.00	\$89.00
TN-155 C/M/Y	\$196.00	\$99.00

### Samsung Laser Toner

Model	Genuine	TONNY
SCX-4100D3	\$123.00	\$49.00
SCX-4216D3	\$123.00	\$49.00
SCX-D4200A	\$123.00	\$49.00
SCX-4521D3	\$126.00	\$49.00
SCX-D4725A	\$123.00	\$64.00
SCX-5312D6	\$96.00	\$49.00
SF-5100D3	\$123.00	\$49.00
ML-1210D3	\$123.00	\$49.00
ML-1610D2	\$114.00	\$49.00
MLT-D108S	\$95.00	-
MLT-D109L	\$145.00	-
ML-1710D3	\$123.00	\$49.00
ML-2010D3	\$113.00	\$49.00
ML-2150D8	\$219.00	\$82.00
ML-2250D5	\$144.00	\$59.00
ML-C3050B BK	\$288.00	\$89.00

### Canon Toner Cartridges

Model	Genuine	TONNY
CART 303/Q2612A	\$89.00	\$45.00
CART 308/Q5949A	\$89.00	\$49.00
CART 310/LK(Q6511X)	\$264.00	\$79.00
CART 312/CB435A	\$81.00	\$49.00
CART 313/CB436A	\$81.00	\$49.00
EP-22 (C4092A)	\$75.00	\$45.00
EP-26	\$99.00	\$45.00
CART307BK(Q6000A)	\$99.00	\$78.00
CART307CM/Y(Q6001/2/3A)	\$105.00	\$78.00
CART 301 BK (EP87 BK)	\$125.00	\$77.00
CART 301 CM/Y (EP87 CM/Y)	\$140.00	\$77.00
CART311BK	\$155.00	-
CART311CM/Y	\$199.00	-
FX-3	\$99.00	\$45.00
FX-7	\$139.00	\$45.00
FX-9	\$120.00	\$49.00
CARTN	\$231.00	\$59.00
CARTU	\$105.00	\$45.00
CARTW	\$149.00	\$53.00
E-31	\$195.00	\$55.00

### Konica Minolta Color Laser Toner

Model	Genuine	TONNY
QMS Magicolor 2300/2350 BK	\$121.00	\$69.00
QMS Magicolor 2300/2350 CM/Y	\$161.00	\$85.00
QMS Magicolor 2400V/2430D/2450 BK	\$119.00	\$85.00
QMS Magicolor 2400V/2430D/2450 CM/Y	\$164.00	\$85.00

### Kyocera Toner Cartridges

Model	Genuine	TONNY
TK-16H	\$73.00	\$61.00
TK-17	\$103.00	\$35.00
TK-18	\$123.00	\$38.00
TK-310	\$130.00	\$59.00
TK-510K	\$98.00	-
TK-510CM/Y	\$172.00	-

### Panasonic Toner Cartridges

Model	Genuine	TONNY
UP-3313	\$242.00	\$73.00
UP-5545	\$242.00	-
KX-PDR Toner for KXP7100T11	\$136.00	\$68.00

For purchase under \$50 on TONNY Cartridges a standard freight charge of \$6.50 applies for all areas within Australia.



# Open Thecus® Reveal the Magic

The magic of Thecus is the wide range of storage solutions for Home, SOHO and Mission Critical Business applications.

Whether you are looking to share digital content, centralize business data or provide secure, fault tolerant storage, Thecus can provide the magic storage solution.

## N2200

*Turn your home network into a storage platform*

- Data protection with RAID 0,1 & JBOD
- Built-in DLNA & iTunes servers
- Bit-torrent Download Manager (also works with eMule).
- Works with all kinds of Windows, Mac & Linux PCs.



## N3200PRO

*A perfect fit for your SOHO space*

- RAID-5 delivers performance & safety
- Full client backups, Web & FTP servers
- Add-on modules for unlimited features expansion.
- Windows Server Active Directory support



## N4200

*Keeping your business going 24x7*

- Dual-core Intel CPU for blistering performance.
- RAID 0,1,5,6,10 & JBOD for ultimate data integrity.
- Brilliant OLED display keeps you up to date
- Windows Server Active Directory support



**NSW**  
Aus PC Market 02 9549 8000 auspcmarket.com.au  
Internet Technology 02 8094 9263 itech.com.au  
Skycamp Technology 02 9291 5909 skycamp.com.au  
Megaware Computer 02 9688 1563 megaware.com.au  
UK International P/L 02 9745 0877 uk.com.au  
HB Outlet 02 8796 5312 hboutlet.com.au

**QLD**  
Umet Online 07 5569 3628 umet.com.au  
Beme Dade 07 5587 1500 bemedade.com.au  
Computer Alliance 07 5420 3200 compalliance.com.au  
Pc GoGo 07 5263 7988 pcgogo.com.au  
TAS 03 6334 5332 carl.computers.com.au  
Carbil Computers 03 6272 6272 cewcomputer.com

**VIC**  
Computers & Parts Land 03 8542 8668 cpl.net.au  
Digital Yes 03 9231 0622 getright.com.au  
Scorpion Technology 1300 726 770 scorpnet.com.au  
SA 08 8211 8661 allnews.com.au  
Allnews Computers 08 8231 0622 getright.com.au  
Getright Computers 08 8186 2110 mts systems.com.au  
MATS Systems

**WA**  
Austin Computers 08 9201 2788 austin.net.au  
FOXCOMP Technology 08 9235 1421 foxcomp.com.au  
Hardware House 08 9322 7344 thehouse.com.au

**AUCKLAND**  
Acquire 09 579 2505 acquire.co.nz

Thecus®. Creator in Storage



# COUGAR

YOUR POWER



# COUGAR CM

#### HIGHEST DURABLE & RELIABLE SOLID CAPS



The best solution for a High-End PSU by using solid caps for 12V, 3.3V, 5V, solid caps provide highest efficiency, best reliability and extend power lifespan.

#### 105 °C CAPACITORS



COUGAR use Highest durable 105°C Japanese capacitors provide uncompromised performance and reliability, delivering 4 times the lifespan of conventional 85°C rated capacitors.

#### AI TEMPERATURE-CONTROLLED 14cm FAN



Extremely Low Noise Level, equipped with a large and ultra-quiet 14cm fan, which adapts its rotating speed to the PSU temperature. Even on its highest rotating level the fan is still quiet enough to be barely noticeable.

#### EXTREMELY HIGH EFFICIENCY



Up to 88% of efficiency, compliant with 80 PLUS® BRONZE efficiency requirement.

#### DC-DC TECHNOLOGY



DC-DC technology provides highest efficiency, most stable performance, and perfect regulation (Regulation <3%).

#### FLEXIBLE CABLE MANAGEMENT



The modular cables that reduce air friction to help minimize airflow through the PC case. The modular design also simplifies installation as it allows unprecedented flexibility in using only those cables which are needed.

#### SUPPORT MULTI-GPU TECHNOLOGY



Support PCI Express 2.0 next-generation graphic card with 30W 3pin PCI-E connector.

#### DYNAMIC MULTI-12V



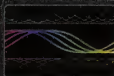
Automatic dynamic load distribution on multi-12V line to provide power especially to the GPU and the CPU. The PSU automatically reverts needed power from unused line to provide high voltage stability to keep component safe.



AI TEMPERATURE-CONTROLLED 14cm FAN



FLEXIBLE CABLE MANAGEMENT



EMC SOLUTION



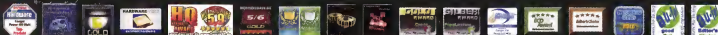
DYNAMIC MULTI-12V



105 °C CAPACITORS



FULL SAFETY PROTECTION



**FortuneTec**

Head Office > Fortune Tec P/L

Sydney • Unit 2, 13 Millennium Court, Silverwater NSW 2128 • t > 02 9748 0001 f > 02 9748 0095

Victoria > Fortune Tec P/L

Melbourne • t > 03 9558 8099 e > salesvic@fortunetec.com.au

Tomorrow's Technology Today  
www.fortunetec.com.au

# LEADTEK

## NVIDIA® QUADRO®

### CREATE INNOVATIVE DESIGNS NVIDIA® QUADRO® PROFESSIONAL GRAPHICS SOLUTIONS



Take your inspiration even further with NVIDIA® Quadro®, the unrivalled professional graphics solution. Certified on all industry leading applications and featuring automatic configuration of display settings, Quadro provides both power efficiency and performance. Digital artists and designers can now create stunning 3D designs with optimal performance for maximum productivity.



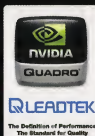
Unleash the hidden potential of the industry leading design software with Leadtek's NVIDIA® Quadro® Professional Graphics Solutions.

#### AutoDesk®

- Better Visual Accuracy
- More Interactive Models
- OpenGL Support
- Enhanced Multi Display Capability
- AutoCad® Certified Drivers

#### Adobe® Creative Suite

- Accelerated Video Encoding
- Realtime Pan, Zoom and Rotate
- Realtime Image Rendering
- Enhanced Brush Resizing
- Enhanced Multi Display Capability



Images courtesy of AutoDesk, NVIDIA Corporation; Evaluation and Digital Solutions, WTVF station and WSI Corporation, and Realtime Technology AG. NVIDIA, the NVIDIA logo, Quadro, are trademarks or registered trademarks of NVIDIA Corporation in the United States and other countries. Other company and product names may be trademarks of the respective companies with which they are associated. © 2003 NVIDIA Corporation. All rights reserved.



**NSW**  
Aus PC Market 02 9548 8000 auspcmarket.com.au  
Enspire Digital 02 9519 4764 enspredigital.com.au  
Megaware Computers 02 9598 1593 megaware.com.au  
UK International 02 9745 0877 uk.com.au  
MWave 02 9549 5187 mwave.com.au  
**WA**  
Austin Computers 08 9201 2788 austin.net.au  
PLE Computers 08 9309 4771 ple.com.au  
Nvidia Computer Services 08 9445 4099 nvidia.com.au

**QLD**  
Umart Online 07 3369 3528 umart.com.au  
Game Dude 07 3387 1500 gamedude.com.au  
Global Solutions For Business 07 3229 0197 globalgroup.com.au  
**SA**  
Alfreds Computers 08 8211 8661 alfreds.com.au  
DIY IT Supply 08 8340 9000 diyit.com.au  
**TAS**  
Principal Computers 08 8235 5000 principalcomputers.com.au  
Taspro Computers 03 6424 1911 taspro.com.au

**VIC**  
Scorpion Technology 1300 726 770 scorpiontec.com.au  
Nexus Technology 03 9665 9988 nexus.com.au  
Umart Online 03 9590 8686 umart.com.au  
**ACT**  
Principal Computers 02 8223 2477 principalcomputers.com.au  
**HAMILTON**  
PB Technologies 07 839 6518 pbtechno.com  
**DUNEDIN**  
PB technologies 03 455 0004

**AUCKLAND**  
Computer Lounge 09 368 4818 computerlounge.co.nz  
INC Technology 09 274 0448 inc.co.nz  
PB Technologies 09 526 5200 pbtech.co.nz  
Playtech 09 4151020 playtech.co.nz  
**WELLINGTON**  
Ascend Technology 04 822 3936 ascend.co.nz  
Leading Edge 04 528 0213 leadingedge.co.nz  
PB Technologies 04 801 6888 pbwellington.co.nz  
Quay Computer 04 499 3366 quay.co.nz



remote  
power  
management

remote  
serial  
management

KVM  
over  
IP



- Remote power on/off/reboot up to 8 outlets via TCP/IP
- Daisy chain additional units to total 128 outlets
- Easy setup and operation via GUI interface

**PN0108**



- Remotely manage up to 16 Serial devices such as routers, hubs, UPS, etc
- Create virtual COM Port accessible via SSH, Hyperterminal, Telnet or PPP
- Security supports RADIUS, AD and user/port specific rights

**SN0116**



- Control up to 16 servers from local or remote simultaneously
- Browser based access and GUI plus full security
- 17" LCD Console integrated keyboard and touchpad

**KL9116MA**

**ALTUSEN™**  
Enterprise KVM Solutions by ATEN

Authorized Distributor for Australia

PH: 1300 269 927

Anyware is a wholesaler and does not sell direct to public. The above products can be purchased from most independent computer dealers throughout Australia. Call the number above for your nearest reseller.

**Anyware**

COMPUTER ACCESSORIES  
[www.anyware.com.au](http://www.anyware.com.au)



**VENOM**  
GOLD

Intel Core i7 930 (2.80GHz)  
**ASUS** X58 Chipset  
 Corsair 6GB DDR3 (1333MHz)  
 2 x 1TB HDD, 850W PSU  
 XFX HD 5850, 1GB, HDMI  
 CoolerMaster CM690, Blu-Ray

+ \$90 Blu-Ray Burner  
 + \$110 HD 5870 1GB  
 + \$280 Core i7 950

**\$2199**

Intel Core i7 930 (2.80GHz)  
**ASUS** X58 Chipset  
 3GB Corsair DDR3 (1333MHz)  
 1TB HDD, 850W PSU  
 PowerColor HD 5770, 1GB  
 CoolerMaster CM690, Blu-Ray

+ \$20 1.5TB HDD  
 + \$120 4GB Memory  
 + \$225 HD5850 1GB

**\$1729**

Intel Core i7 930 (2.80GHz)  
**ASUS** X58 Chipset  
 Corsair 6GB DDR3 (1600MHz)  
 Corsair 2x 64GB SSD + 1TB HDD  
 2 x PowerColor HD 5870, 1GB  
 Blu-Ray Burner, Obsidian Case  
 Corsair 1000W PSU, H50 Cooler

+ \$130 12GB Memory  
 + \$135 2 x 1TB HDDs  
 + \$270 Core i7 950

**\$4249**

Intel Core i7 860 (2.80GHz)  
**GIGABYTE** P55 Chipset  
 Corsair 4GB DDR3 (1333MHz)  
 1TB SATAII HDD, 32MB  
 XFX Radeon HD 5750, 1GB  
 Antec Two Hundred, 750W

+ \$10 HD 5770 1GB  
 + \$20 1.5TB HDD  
 + \$125 Blu-Ray Reader

**\$1399**

Intel Core i5 750 (2.66GHz)  
**GIGABYTE** P55 Chipset  
 Corsair 2GB DDR3 (1333MHz)  
 500GB SATAII HDD, 16MB  
 PowerColor HD 5670, 512MB  
 Antec Two Hundred, 550W

+ \$60 1TB HDD  
 + \$90 HD5770 1GB  
 + \$95 4GB Memory

**\$949**

Intel Core i3 540  
 733MHz Graphics  
**GIGABYTE** H55 Chipset  
 2GB 1333mhz DDR3  
 500GB HDD, 16MB  
 Blu-Ray Reader  
 Dual Hybrid TV Tuner  
 Antec Fusion Case  
 460W Zalman PSU  
 MCE Remote Included

**\$1199**

Intel Core i5 661 (3.33GHz)  
**GIGABYTE** H55 Chipset  
 Corsair 4GB DDR3 (1333MHz)  
 500GB SATAII HDD, 16MB  
 Intel 900MHz Graphics, HDMI  
 Centurion 5 Case, 460W PSU

+ \$90 1TB HDD, 32MB  
 + \$109 Radeon HD 4770  
 + \$110 Intel Core i5 670

**\$899**

Intel Core i3 530 (2.93GHz)  
**GIGABYTE** H55 Chipset  
 Corsair 2GB DDR3 (1333MHz)  
 500GB SATAII HDD, 16MB  
 Intel 733MHz Graphics, HDMI  
 Centurion 5 Case, 460W PSU

+ \$20 Core i3 540  
 + \$60 1TB HDD  
 + \$95 4GB Memory

**\$699**

Pentium Dual E5300 (2.60GHz)  
**GIGABYTE** G41 Chipset  
 Corsair 2GB DDR2 (800MHz)  
 500GB HDD, 420W PSU  
 Intel X4500 Graphics  
 Aywon A1-502 Black Case

+ \$20 640GB HDD  
 + \$70 4GB Memory  
 + \$80 Core 2 Duo E7500

**\$415****WWW.SCORPTEC.COM.AU**

AUSTRALIA WIDE DELIVERY, INCLUDING COD!

All Prices are based on Cash only and include GST

2% Visa/Mastercard/Bankcard, 4% Amex/Diners Surcharge applies

Direct Deposit Banking Details: BSB: 033-365 / ACC: 212477

Pricing subject to change, Errors and Omissions Excepted

All Rights and Trademarks are property of their respective owners

**KASPERSKY** Lab  
 Internet Security 2010  
 Now Included On All  
 ScorpTec Systems



WWW.SCORPTEC.COM.AU

1300 726 770



**EPSON®**

**3LCD PROJECTORS**



**EB-S8 Multi Purpose**

Bright, Stylish and Compact.



**5000 hr Lamp**

**2,500 Lumens**

**SVGA**  
800 x 600  
USB Display

**2000:1 Contrast**

**Front Exhaust**

RRP ~~\$999~~ **SCORPTEC \$825\***

**EB-W8 Multi Purpose**

Home, Business and Education.



**5000 hr Lamp**

**2,500 Lumens**

**WXGA**  
1280 x 800  
16:10

**Auto Keystone**

**HDMI/USB Input**

RRP ~~\$1599~~ **SCORPTEC \$1379\***

**EMP-TW700 Home Theatre**

Compact, Bright and Wireless.



**10-Bit Colour**

**1,600 Lumens**

**1280x720**  
720p  
16:9

**10,000:1 Contrast**

**HDMI Input**

RRP ~~\$2199~~ **SCORPTEC \$1789\***

**EB-1725 Portable Corporate**

Ultimate Projector for Mobile Presenters.



**Wired, Wireless PC Free**

**3,000 Lumens**

**1024x768 XGA**  
4:3

**2000:1 Contrast**

**Low Fan Noise**

RRP ~~\$2599~~ **SCORPTEC \$1950\***

**EH-TW3500 Home Theatre**

Full 1080p High Definition Digital.



**SOUND BY JBL AWARD**

**Up to +96.3% Lens Shift**

**36,000:1 Contrast**

**FULL HD**  
1920x1080  
10-bit Panel

**Cinema Filter**

**2x HDMI 1.3 Input**

RRP ~~\$2999~~ **SCORPTEC \$2599\***

**EH-TW4000 Home Theatre**

State of the Art Home Cinema.



**Only 1 Left!**

**75,000:1 Contrast**

**FULL HD**  
1920x1080  
12-bit Panel

**Deep Black Technology**

**2x HDMI Input**

RRP ~~\$4799~~ **SCORPTEC \$3299\***

\*Enter this Promo Code

**APCEP**

Online to Redeem  
The above Specials

**CLAYTON STORE**  
Unit 4-5/2, Garden Road  
Clayton, VIC 3168  
Ph: 03 8561-3200  
Fax: 03 9561-1688  
sales@scorptec.com.au  
Mon-Fri: 10am - 6pm  
Saturday: 10am - 3pm  
Sunday: Closed

**ROWVILLE STORE**  
Unit 1/899 Wellington Rd  
Rowville, VIC 3178  
Ph: 03 9764 3222  
Fax: 03 9764 3111  
rowville@scorptec.com.au  
Mon-Wed: 10am - 6pm  
Thu-Fri: 10am - 7pm  
Saturday: 10am - 3.30pm



# ACTIVO

## GV-5000 *Feel the Speed!*

### Performance and entertainment on the go!

Whether at home or in the office, the GV-5000 handles daily tasks and entertainment with ease using Intel® Core™2 Duo processor technology and NVIDIA® GeForce® Graphics. Watch the latest movies or play your favourite games with the latest graphics experience. Simplify your life with the new feature rich Microsoft Windows® 7, and enjoy everyday... simplified!



#### GV-5000 Features:

- Powerful performance with Intel® Core™2 Duo processor
- Enjoy entertainment and gaming with NVIDIA® GeForce® GT 130M
- Features Windows® 7 64-bit operating system
- Added security with biometric finger print reader for computer protection and file encryption.
- Built-in web cam for enhanced online communication
- HDMI connectivity for digital display quality and sound to external displays such as monitors and TVs



### Also available...

With Performance, features and style; the ACTIVO range of netbooks and notebooks are the ideal companions to create the ultimate freedom for today's active lifestyle.



**AV-1001**  
Go Mobile!



**AP-2000**  
Your Life... Mobile!



**LV-3000**  
Ultra-Portable



**GV-5000**  
Reliable Performance!

# AUTUMN SALE

**CITY SOFTWARE**

Black Tie Service, Plain Wrap Prices\*

☎ 1300 658 600

🌐 citysoftware.com.au

Microsoft  
Office Small Business

Microsoft  
Office Small Business 2007

**FREE  
DELIVERY**



**Greenpoint Solar Powered Phone Charger**  
Charge your phone, camera, & iPod with solar power!  
• Charge your phone in 60-90 mins!  
• 10 Connectors included

WebCode: GPE0002



**Acer Aspire 5635 Notebook**  
Built for SOHO

**2.2 GHz**  
Intel Core 2 Duo

**3GB**  
DDR3 RAM

**320GB**  
Hard Drive

**Windows 7**  
Home Premium

WebCode: ACN1649

**\$698**  
Save \$201



**Samsung CLP-620ND Colour Laser**  
Efficient and sharp detail

- 20ppm Colour & Mono
- 9600x600 DPI
- USB 2.0, Ethernet

WebCode: SAM0620

**\$449**  
Save \$330

Word 2007

Excel 2007

Powerpoint 2007

Publisher 2007

Outlook 2007 with Business Contact Manager

WebCode: MSA6105

**\$228**  
Save \$521  
**HOT PRICE**

## PRICE CHECKER

Harris Technology	\$238
Officeworks	\$248
Harvey Norman	\$349
Dick Smith	\$499

**FREE DELIVERY NATIONWIDE**  
For orders over \$200 and under 5kg

AVG  
Authorized Reseller

symantec.  
Symantec Gold Partner

Microsoft  
CERTIFIED  
Solution Provider

ATI  
Partner

Premier Partner  
hp

NUANCE  
Member of the Year 2008

SAMSUNG





## SVP Digital Slide Scanner

Convert all your 35mm negatives and slides to digital images

- Converts all 35mm color / monochrome negatives and mounted slides to digital at the touch of a button
- 5MP CMOS sensor provides 10 bits per colour channel for data conversion, and uses fixed focus and automatic exposure control and colour balance, resulting in clear digital images without the loss of resolution
- Ideal for safeguarding images from weddings, holidays and treasured family moments
- Each negative or slide takes less than a second to scan and download into a digital file to print, copy to CD or store
- 3 Mega Pixel
- USB 2.0 connection



**\$49.80**

**HOT PRICE**

WebCode: BUN0082

## Otek Digital Slide Scanner with 2.4" Screen

Stand alone slide scanner

Easily capture and archive your slide and negatives. Never lose the image quality of your slides once they are converted to a digital image.

- 5 Megapixel
- Instant Preview and high-speed one-touch scanning (0.5 sec.)
- USB 2.0 connection
- 48 bits, 3600 dpi resolution
- Easy to use with software included



**\$99.95**

Save \$50

WebCode: OTE0004

## Epson V700 Scanner

Advanced film, document & photo scanning solution

- 6400 dpi x 9600 dpi
- FireWire & USB connectivity
- Windows & MAC compatible
- 48-bit colour

WebCode: EPS0700

## Canon CanoScan 8800F Scanner

High speed document / Photo slide scanner

- 4800x9600 dpi
- Continuous scanning of up to 12 slides
- USB connectivity
- Scan to PDF

WebCode: CAN0015



**VIDEO ONLINE**

## Digital Photo Frames

Showcase your favourite memories

7"	Greenpoint Frame - Black (480 X 234)	GPE0003	<b>\$39.95</b>
12.1"	Greenpoint Frame - Black (800 X 600)	GPE0004	<b>\$124</b>
15"	Shintaro Frame - Black (1024 X 768)	BUN0057	<b>\$205</b>



**\$89**

**HOT PRICE**

## Otek DVS-126 720p Digital Video Camera

High definition pocket video camera

Weatherproof Digital Camcorder with Music Player, Compass, Carabiner Clip and 2" LCD Screen

WebCode: OTE0007



**\$199**

**NEW**

## Otek DVH-590 1080p Digital Video Camera

Great value HD video camera

- 5.0 Megapixel
- 5x Optical Zoom
- 3.0" Touch Screen
- Li-Ion Battery

WebCode: OTE0008



**\$268**

Save \$20

**FREE DELIVERY**

## Canon Digital IXUS 120 IS

The thinnest wide-angle IXUS ever

- 12.1 Megapixels
- 4x Optical zoom
- 2.7" LCD II display
- 28mm Wide-angle lens

WebCode: CAN4047



**\$640**

Save \$150

**FREE DELIVERY**

## Canon Powershot G11 Digital Still Camera

Amazing in low light!

- 10 Megapixel
- 5x Optical zoom
- 28mm Wide angle lens
- 2.8" Screen

WebCode: CAN4026

## Greenpoint US Digital Microscope (25x-400x)

Great for hobbyists and curious young minds

Capture higher resolution images and video then display them on your PC using a simple USB connection. Collect items from around the house take a closer look and satisfy your curiosity! The microscope provides its own illumination via LEDs so you just plug it into your computer, download the software and view objects on your PC up to 400x.



**VIDEO ONLINE**

**\$99**

WebCode: GPE0008



## Greenpoint 4GB Credit Card MP3 Player

Carry your favourite MP3's in your wallet!

- Size of a Credit Card!
- Holds up to 2000 MP3's
- 2.5mm Jack headphones
- USB Plug'n'Play
- Up to 8 hour battery life on each charge



**\$29.80**  
HOT PRICE

WebCode: GPE0001



**\$29.95**  
Save \$29

### Digitek 8 Way Surge Board

Protect your valuable equipment  
Protect against:

- Lightning Strikes
- Surges
- Spikes
- EMI / RFI

WebCode: BIT0001



**\$88**  
Save \$41

### Laser HD PVR Set Top Box

Receives all the latest Free view Digital channels

- PVR via USB or HDD (500GB or under)
- 7 Day Electronic Program Guide

WebCode: LAS9997



**\$88**  
Save \$41

### Akai USB Turntable for PC & Mac

Convert your vinyl records to digital with ease!

- USB & Analogue Connectivity for PC and MAC
- 295mm Turntable Platter

WebCode: AKA0001



**\$89**

### DJ Tech Cassette Tape to MP3 Encoder

Turn your cassette tapes into MP3's

- Store your cassette tapes on your PC
- Voice activated system cassette deck with TWO Speed Play.

WebCode: DJT0001



**\$14.95**

### Triple Car Adapter with USB Port

Plug in up to 4 devices at the same time when you on the go!

- Works in cars or trucks 12v / 24v
- Plug in up to 4 devices at the same time

WebCode: RDM0001



**\$33**  
HOT PRICE

### Greenpoint 175w Inverter with USB Outlet

Mains power from your cigarette lighter socket

Charge and power your electronics on the road, in your car! 90.5% surge capacity to start high loads

WebCode: GPE0005



**\$44.95**  
Save \$55  
HOT PRICE

### Logitech S125i iPod Speakers

Ready to move, ready to groove  
Whatever iPod you have iPod classic, iPod nano, or iPod touch you can play and charge it with this speaker dock

WebCode: LOG3832



**\$88**  
Save \$41

### DJ-Tech DJ Mouse MP3 Mixing Kit

Real-time mixing and scratching on MP3's

We are proud to bring you the first DJ Mouse, fully designed and made for all DJ applications

WebCode: DJT0002

### AVLabs USB HD Digital TV Tuner

Watch TV on your computer!

You can enjoy watching or recording digital TV on your computer or laptop anywhere, anytime!



**\$39.95**  
Save \$30

WebCode: AVL1013

### HD HomeRun Network TV Tuner

One TV tuner for all your PC's

Watch & record digital TV or record two channels at same time across multiple computers.



**\$238**  
Save \$61  
FREE DELIVERY

WebCode: LAK0014



**\$259**  
Save \$40  
FREE DELIVERY

### OXX - DAB+ Classic Internet Digital Radio

10,000 Radio stations, at your fingertips!

- Supports DAB & DAB+ Digital
- iPod & MP3 Player Inputs

WebCode: Black - LAK0015  
WebCode: White - LAK0016



**\$19**

### CD/DVD Disc Scratch Repair Kit

Say goodbye to scratched discs!

Easy to use repair kit includes all the accessories you need to fix your scratched CD's and DVD's

WebCode: HAL0001

### B-Speech Bluetooth Handsfree Carkit

Save yourself a traffic infringement with this product

Built with form and function in mind, this little gem does not require any cables and can be mounted on the sunshade in your car.

- Supports simultaneous syncing on up to 2 devices
- Talk time: Up to 6 Hours
- Standby time: Up to 600 hours
- Built-in speaker



**\$39.95**  
HOT PRICE

WebCode: BSP0002

**\$73**Save \$20  
**HOT PRICE****Linksys WRT120N  
Wireless-N Router**  
Twice the speed of  
Wireless-G

The Wireless-N Home Router gives you a wireless connection that's twice the speed of Wireless-G

WebCode: LNK1200

**\$95**

Save \$34

**Linksys WRT54GL Linux  
based Wireless-G Router**  
Designed specifically for  
hobbyists and wireless aficionados

- Eliminate the need for cables
- Compatible with Wireless-B
- Browser-based configuration utility

WebCode: LNK5525

**\$286**Save \$190  
**FREE DELIVERY****Billion BiPAC 7404VNPX  
ADSL2+ Firewall Router**  
The router that has it all

VOIP, 3G, ADSL2+, Wireless-N  
Dual WAN interfaces for ADSL2+ and  
3G connections. High speed internet  
access with ADSL2+ / 2+, backward  
compatible with ADSL

WebCode: BILL0040

**\$198**Save \$100  
**HOT PRICE****Billion BiPAC 7800N  
ADSL2+ Firewall Router  
+ Gigabit Ethernet Switch**  
Recommended for the enthusiasts

- Draft-N wireless
- 4-Port gigabit switch
- Robust Firewall Built-In

WebCode: BILL0041

**\$126**Save \$70  
**HOT PRICE****NetComm NP3680  
Multifunction USB Server**  
Connect USB storage  
or a printer to your network

- 2 USB Ports
- MAC & Windows supported
- Ethernet 10/100

WebCode: NET9483

**\$125**

Save \$74

**NETGEAR MBR624GU  
3G Wireless Router**  
Share your 3G connection

- Wireless G with 4-Port switch
- Push 'N' Connect WiFi Setup.
- Green energy saving

WebCode: NTG8221

**\$229**Save \$150  
**FREE DELIVERY****Linksys WRT610N  
Dual-Band Wireless Router**  
Faster gaming, music, and HD  
video streaming

Internet-sharing router and 4-port  
Gigabit Switch with built-in dual  
bands that will increase speed and  
range.

WebCode: LNK6300

**\$198**

Save \$101

**NETGEAR WNDR3700  
Dual Band N Gigabit Router**  
The power you want and flexibility  
you need for your network

- Gigabit Ethernet ports deliver ultra-fast wired connections
- 3 power and range settings reduce power up to 75%

WebCode: NTG8346

**\$197**Save \$40  
**NEW****D-Link Powerline HD 4-Port Starter Kit**  
Create a network using your home's existing electrical wiring

Everything you need to connect computers, digital media players, game consoles and other Ethernet-enabled devices in a network via your home's existing electrical wiring.

- Ideal for HD video, music sharing, on-line games, VoIP Calls
- Network security with the push of a button
- Simple plug and play

WebCode: DLK0307

**\$79**Save \$10  
**HOT PRICE****Linksys WUSB600N  
Dual Band Wireless N  
USB Adapter**  
Ultrafast connection through USB

- Connect to 2.4GHz or 5.0GHz
- Compatible with wireless A,B,G,N

WebCode: LNK6290

**\$33**

Save \$16

**NETGEAR GA311  
Gigabit PCI Adapter**  
Outstanding speed

- 10/100/1000 Auto sensing ports
- PCI Plug and play

WebCode: NTG7154

**\$95**Save \$34  
**LIMITED STOCK****DGS-1008D 8-Port Gigabit  
Desktop Switch**  
Get the blazing speed of Gigabit  
Ethernet connection

- Green Ethernet technology
- 16Gbps switching capacity
- Desktop or wall-mount design
- Non-blocking architecture

WebCode: DLK0867

**\$495**Save \$145  
**FREE DELIVERY****D-Link DGS-1224T  
WebSmart 24-port  
Gigabit Switch**  
Create a high-speed Ethernet  
network with Gigabit capability

- Two combo SFP fiber connections
- Network security
- Traffic segmentation

WebCode: DLK9225

**\$566**Save \$110  
**HOT PRICE****QNAP TS-219P  
2-Bay NAS Server**  
Supports 2.5" &  
3.5" SATA HDD's

- iSCSI Support
- RAID 0, 1, JBOD systems
- Gigabit Ethernet

WebCode: QNA0028

**\$639**Save \$110  
**HOT PRICE****QNAP TS-410  
4-Bay NAS Server**  
Low power consumption &  
quiet operation

- RAID 0, 1, 5, JBOD
- Surveillance station built-in
- Gigabit Ethernet

WebCode: QNA0035

## What is USB 3.0?

USB 3.0 is the next major revision of the Universal Serial Bus, created in 1996 by a consortium of companies led by Intel. Superseding USB 2.0.

## What are the benefits?

More Power Efficient - Power saving devices on Idle.  
Better Transfer rates - Up to 4.8Gbps  
Built specifically for future technologies.

Backward compatible with USB 2.0 devices

### Unitex USB 3.0 PCMCIA Express Card

Add USB 3.0 compatibility to your notebook

- NEC UPD720200 chipset
- ExpressCard/34 form factor module
- Compliant with USB 3.0 Super-Speed (5Gbps).
- Windows XP/Vista/7 (32-bit/64-bit)
- 2 x external USB 3.0 connectors



WebCode: UNI1001

### Unitex USB 3.0 PCI Express Controller

Add USB 3.0 compatibility to your desktop

- PCIe 1x bus interface
- Compliant with USB 3.0 Super-Speed (5Gbps).
- Windows XP/Vista/7 (32-bit /64-bit)
- 2 x external USB 3.0 connectors



WebCode: UNI1000

### Unitex USB 3.0 HDD SATA Dock

Transfer data at USB 3.0 Speeds

- USB 3.0 SuperSpeed (5 Gbps)
- Compliant to USB 3.0 Specification
- Supports ATA / ATAPI device (option)
- Supports 2TB over HDD
- Supports Win 98/ME/2000/XP Vista /Windows 7



WebCode: UNI1002



### LaCie 1TB Network Space 2

Extend the storage on your network

With the LaCie Network Space 2, you're not simply storing files from your computer; you're storing files from all over your home. Connect the Network Space 2 through the Ethernet port to a computer or to a router, and share and store all of your media files from anywhere in your house, with the read and write speeds that you need. You can even back up multiple computers to ensure that your files are safe.

WebCode: LAC1326

### LaCie Rikiki Hi-Speed USB 2.0 500GB

Resistant aluminum exterior

- USB Boost and backup software included
- Plug & play



WebCode: LAC1905



### SanDisk Cruzer Micro USB Flash Drives

Premium storage in a capless design

4GB	SAN0292	\$22
8GB	SAN0192	\$30
16GB	SAN0193	\$53
32GB	SAN0198	\$106

### Verbatim Pin Stripe 4GB USB

Store 'n' Go in style!

Green	VBM2503	\$16
Pink	VBM2506	\$16
Blue	VBM2507	\$16



### Verbatim Micro 4GB USB

Storage that fits on your keychain!

Green	VBM0193	\$16
Pink	VBM0194	\$16
Blue	VBM0195	\$16



### Verbatim 2.5" Mobile Disk

Storage in a slim form factor

320GB	VBM6287	\$86
500GB	VBM6288	\$126

SanDisk



Ultra II SD	4GB	SAN0098	\$18
	8GB	SAN0101	\$34
	16GB	SAN0151	\$63
	32GB	SAN0197	\$132

Extreme III SDHC	4GB	SAN0125	\$27
	8GB	SAN0128	\$45
	16GB	SAN0275	\$146
	32GB	SAN0209	\$241

MS Pro Duo	4GB	SAN0053	\$23
	8GB	SAN0120	\$39
	16GB	SAN0189	\$82
	32GB	SAN0208	\$168

Ultra II MS Pro Duo	4GB	SAN0066	\$31
	8GB	SAN0172	\$54
	16GB	SAN0196	\$115
	32GB	SAN0333	\$232

Ultra II CF	2GB	SIM0691	\$19
	4GB	SAN0023	\$27
	8GB	SAN0037	\$45
	16GB	SAN0216	\$79

Extreme Pro CF	16GB	SAN0213	\$245
	32GB	SAN0214	\$435
	64GB	SAN0215	\$795

**1.6GHz**  
Intel Atom N270

**1GB**  
DDR2 Ram

**160GB**  
Hard Drive

**Windows XP**  
Home

**\$348**  
Save \$151  
**LIMITED STOCK**



## ASUS Eee PC 1001HA Netbook

Go anywhere in style with Eee PC 1001HA Seashell

WebCode: ASE10038

**1.66GHz**  
Intel Atom N450

**1GB**  
DDR2 RAM

**250GB**  
Hard Drive

**Windows 7**  
Starter

**\$469**  
**FREE DELIVERY**



**NEW**  
ATOM N450  
PROCESSOR

## Samsung N150 Netbook

Beefed up for Windows 7

WebCode: SBB0018

**1.66GHz**  
Intel Atom N270

**1GB**  
DDR2 RAM

**160GB**  
Hard Drive

**Windows XP**  
Home

**\$438**  
Save \$241  
**FREE DELIVERY**



## Acer Aspire One D250

Go anywhere in style!

WebCode: ACE0128

**2.2 GHz**  
Intel Core 2 Duo

**3GB**  
DDR2 RAM

**320GB**  
Hard Drive

**Windows 7**  
Home Premium

**\$698**  
Save \$201  
**FREE DELIVERY**



## Acer Aspire 5635 Notebook

Built for SOHO

WebCode: ACN1649

**2.2 GHz**  
Intel Core 2 Duo

**3GB**  
DDR3 RAM

**500GB**  
Hard Drive

**Windows 7**  
Home Premium

**\$748**  
Save \$101  
**FREE DELIVERY**



## Lenovo G550 Notebook

New & Updated Specifications

WebCode: LEN0290

**2.2 GHz**  
Intel Core 2 Duo

**3GB**  
DDR3 RAM

**500GB**  
Hard Drive

**Windows 7**  
Home Premium

**\$986**  
Save \$241  
**FREE DELIVERY**



## Samsung R580 Notebook

nVidia GT310M 512MB DDR3 Graphics fitted

WebCode: SBN0020

**2.2 GHz**  
Intel Dual Core

**4GB**  
DDR3 RAM

**500GB**  
Hard Drive

**Windows 7**  
Home Premium

**\$1238**  
Save \$261  
**FREE DELIVERY**



## Acer Aspire 5738 Notebook

Touch screen technology

WebCode: ACE0132

**2.4 GHz**  
Intel Core i5

**4GB**  
DDR3 RAM

**500GB**  
Hard Drive

**Windows 7**  
Home Premium

**\$1357**  
Save \$142  
**FREE DELIVERY**



## Samsung R780 Notebook

nVidia GT330M 1GB DDR3 graphics fitted

WebCode: SBN0017

**2.4 GHz**  
Intel Core i5

**4GB**  
DDR3 RAM

**500GB**  
Hard Drive

**Windows 7**  
Home Premium

**\$1578**  
Save \$177  
**FREE DELIVERY**



## Lenovo X200 Notebook

Massive 9 cell battery fitted

WebCode: IBT7549

**2.13 GHz**  
Intel Core i3

**4GB**  
DDR3 RAM

**500GB**  
Hard Drive

**Windows 7**  
Home Premium

**\$986**  
Save \$241  
**FREE DELIVERY**



## Samsung R580 Notebook

nVidia GT310M 512MB DDR3 Graphics fitted

WebCode: SBN0020

**2.4 GHz**  
Intel Core 2 Duo

**3GB**  
DDR3 RAM

**320GB**  
Hard Drive

**Windows XP**  
Professional

**\$1578**  
Save \$177  
**FREE DELIVERY**



## Lenovo X200 Notebook

Massive 9 cell battery fitted

WebCode: IBT7549



**\$139**

Save \$190

**Acer X193HQ 19" Widescreen LCD**

- 5ms Response Time
- 1366x768 Resolution
- 10,000:1 Contrast Ratio
- 300 cd/m2 Brightness

WebCode: ACM0148

**\$415**

Save \$184

**Samsung 2233RZ 22" 3D LCD Monitor**

- 3ms (3D) Response Time
- 1680x1050 Resolution
- 20000:1 Contrast Ratio
- 300 cd/m2 Brightness

WebCode: SAM2322

**Acer X233HB 23" 16:9 Full HD Monitor**

Outstanding value and quality

- 5ms response time
- 1920x1080 Resolution
- 300 cd/m2 brightness
- 4,000:1 Contrast Ratio

**\$179**After \$39 Cashback  
Save \$300**LIMITED STOCK**

WebCode: ACM0145

**\$225**

FREE DELIVERY

**PicoTech USB Pocket Projector**

Fits in your pocket!

The USB Pico projector is a perfect companion to any netbook, notebook or PC for small group presentations and entertainment

WebCode: PIC1001

**\$119****VIDEO ONLINE****40" Portable Projector Screen**

Can be easily carried on an aeroplane  
Perfect for on the go or impromptu presentation

50" Screen (MNT0003) **\$139**

WebCode: MNT0002

**\$55****Wireless Entertainment Keyboard with SmartPad**

WebCode: ORT0002

**\$109**

Save \$40

**Microsoft Wireless Laser Desktop 6000 V3 Keyboard Mouse**

WebCode: MST8490

**\$49**

Save \$50

**Microsoft Natural Wireless Laser Mouse 6000**

WebCode: MST8438

**\$83**

Save \$16

**Logitech Bluetooth Mouse M555b**

WebCode: LOG3823

**\$22**

Save \$7

**Microsoft Comfort Optical Mouse 1000**

WebCode: MST8422

**\$29.80****VIDEO ONLINE****USB Wired SmartPad**

WebCode: ORT0001

**\$8.80****USB Powered LED Light**

WebCode: RDM0012

**\$77**

Save \$102

**Olin Digital Voice Recorder - 512MB**

WebCode: OLI0013

**\$44**

NEW

**Havit Universal AC/DC 100W Notebook Adapter**

- Can be used in car and at home
- Great replacement power adaptor for most notebooks
- Fits notebook power output ranging 15V - 24V

WebCode: HAV0001

**\$109**

Save \$40

**BATTERY BACKUP FOR UP TO 13 MIN****Eaton Powerware 3105 700Va UPS**

Never lose power to your devices again

Protects small office and home office equipment from power outages, surges, sags, and line noise

WebCode: PWR1003

**\$17.80**

Save \$32

**USB VGA Webcam**

WebCode: RDM0011

**\$38**

Save \$51

**Wireless Presenter**

WebCode: SIG0009

**\$126**

Save \$73

**Logitech QuickCam Pro 9000**

WebCode: LOG3550

**\$68**

Save \$31

**Logitech Wireless Presenter R400**

WebCode: LOG3550





**\$425**  
Save \$35  
HOT PRICE

### Samsung CLX-3175FN Colour Laser Multifunction

Fax / copier / printer / scanner

- 17ppm Mono & 4ppm Colour
- 2400x600 DPI Printing
- USB 2.0, Ethernet

WebCode: SAM3175

1.5K Black	SAM6564	\$76
1K Cyan	SAM6565	\$64
1K Magenta	SAM6566	\$64
1K Yellow	SAM6567	\$64



**\$449**  
Save \$20  
NEW

### Samsung CLP-620ND Colour Laser

Efficient and sharp detail

- 20ppm Colour & Mono
- 9600x600 DPI Printing
- USB 2.0, Ethernet

WebCode: SAM0620

5.5K Black	SAM0621	\$129
5.5K Cyan	SAM0622	\$152
5.5K Magenta	SAM0623	\$152
5.5K Yellow	SAM0624	\$152

### Samsung CLX-6210FX Colour Multifunction

Fax / copier / printer / scanner

Reach out and explore the possibilities! The CLX-6210FX series is designed to fit the way your business works. There are a variety of advanced features, and simplified connectivity to match your needs.

- 20ppm Mono & Colour
- 65,000 Monthly duty cycle
- USB 2.0, Ethernet



**\$697**  
Save \$502  
HOT PRICE

5K Black	SAM6361	\$149
5K Cyan	SAM6362	\$196

WebCode: SAM6210

5K Magenta	SAM6363	\$196
5K Yellow	SAM6364	\$196



**\$249**  
Save \$50  
NEW

### Fuji Xerox Phaser 3100 MFPX Mono Multifunction

Fax / copier / printer / scanner

- 20ppm Mono
- 600x600 DPI
- USB 2.0
- Print, Scan, Copy, Fax

WebCode: FXP3109

4K Black	FXP3103	\$148
----------	---------	-------



**\$579**  
Save \$220

**BONUS**  
3 YEAR ON SITE  
WARRANTY

### Fuji Xerox DocuPrint C1190 Colour Multifunction

Print / Copy / Scan / Fax

- Resolution 600 x 600 DPI
- 12ppm Colour / 16ppm Mono
- PC & MAC Compatible
- USB 2.0, Ethernet

WebCode: FXP1190

3K Black	FXP1193	\$106
3K Cyan	FXP1194	\$175
3K Magenta	FXP1195	\$175
3K Yellow	FXP1196	\$175



**\$715**  
Save \$383

**BONUS**  
3 YEAR ON SITE  
WARRANTY

### Fuji Xerox DocuPrint C2200 Colour Laser

Handle complex documents with ease

- 25ppm Mono & Colour
- 256MB RAM
- USB 2.0, Ethernet

WebCode: FXP2201

4K Black	FXP2208	\$176
4K Cyan	FXP2209	\$217
4K Magenta	FXP2210	\$217
4K Yellow	FXP2211	\$217



**\$1878**  
Save \$535

**BONUS**  
3 YEAR ON SITE  
WARRANTY

### Fuji Xerox Phaser 8560DN Colour Laser

Efficient solid ink technology

- 30ppm Colour & Mono
- Built-in Duplexer
- USB 2.0, Ethernet

WebCode: FXP0562

3.4K Black	FXP0569	\$84
3.4K Cyan	FXP0570	\$126
3.4K Magenta	FXP0571	\$126
3.4K Yellow	FXP0572	\$126



**\$268**  
Save \$131  
HOT PRICE

### Epson Stylus TX800FW Colour Inkjet MFP

Fax / copier / printer / scanner

- 40 ppm Mono & Colour
- Up to 5760 x 1440 DPI printing
- USB 2.0, Ethernet, Wireless G

WebCode: EPI0803

Black	EPA2192	\$20
Light Cyan	EPA2592	\$20
Light Magenta	EPA2692	\$20
Cyan	EPA2292	\$20
Magenta	EPA2392	\$20
Yellow	EPA2492	\$20



**\$125**  
Save \$44

### Canon PIXMA IP4700 Inkjet Printer

Vibrant photos & documents at home

- 9600x2400 DPI
- 1 Picolitre droplet
- CD & DVD Printing
- USB 2.0

WebCode: CNN0057

Black	CAN7000	\$18
Cyan	CAN7003	\$18
Magenta	CAN7002	\$18
Yellow	CAN7001	\$18



**\$179**  
Save \$267  
HOT PRICE

### Canon PIXMA MP560 All-in-One Inkjet Printer

Wireless-Ready multifunction inkjet

- 9600x2400 dpi printing
- 5 Colour ink tanks
- 2.0" TFT screen

WebCode: CNN0058

Black	CAN7000	\$18
Grey	CAN7004	\$18
Photo Black	CNN0022	\$27
Cyan	CAN7003	\$18
Magenta	CAN7002	\$18
Yellow	CAN7001	\$18



**\$349**  
Save \$150

### Canon PIXMA IP100 Portable Inkjet Printer

Portable printing solution

- 20ppm Mono, 14ppm Colour
- 9600 x 2400 DPI
- USB, Infrared

WebCode: CAN0732

Black PGI-35	CAN8104	\$15
Colour CLI-36	CAN8105	\$32

## Adobe Photoshop Elements 8 & Adobe Premiere Elements 8

Photo and video editing made easy!

Adobe Elements software makes it easy to create incredible movies & photos. Get started quickly with automated moviemaking options, add knockout visuals and sound, and share your creations everywhere.

**\$184**  
Save \$85  
**HOT PRICE**



WebCode: ADS5003

**\$129**  
Save \$70  
**HOT PRICE**



### Corel Paint Shop Pro Photo X2 Ultimate

A complete photo-editing software solution

- Reduce red-eye, brighten images, and edit photos with ease.
- Easy and intuitive user-interface

WebCode: COR9203

**\$196**  
Save \$53



### Corel Video Studio X2 Pro Ultimate

All-in-one video-editing software  
Create high-quality HD and standard-definition movies, slide shows and DVDs.

WebCode: CRL0012

## Pinnacle Studio 14 HD Ultimate

The ultimate software for making HD movies at home

- Stop-motion capture & fluid image stabilization technology from Avid
- Share straight to Blu-ray, HD DVD, DVD, YouTube, the web, MP3 sound files and more
- Export movies for Flash, QuickTime, AVCHD, PS3, Nintendo Wii, Xbox and more

**\$124**  
Save \$121



WebCode: PIN0989

**\$44**  
Save \$5



### Punch! Weekend Project

Your ideas made easy

- Simple step-by-step instructions to complete any project.
- Over 100 mins of video tutorials
- Print out a bill of materials

WebCode: PUN0034

**\$193**  
Save \$56



### Punch! Home & Landscape Design Pro

Dream it. Visualise it. Do it!

- Over 100 hours of video tutorials
- Integrated web access for all your needs

WebCode: PUN0033

**\$89**  
Save \$10



### WebCreator 5 Pro

The easy solution for creating professional websites

- No programming required!
- Select from 150 customisable templates!
- Add visual effects, media content, photos, forums & blogs.

WebCode: WBC0001

**\$156**



### Extensis Suitcase Fusion 2

Professional font manager  
Locate, group, examine, preview and activate any font in your library. A must for graphic designers!

WebCode - MAC: EXT0098  
WebCode - WIN: EXT0097

## TurboCAD 16 Deluxe 2D/3D

Unlimited design options

Hundreds of professional drafting and design tools, incredible file support, video and interactive tutorials. Recreate products, architecture, and floor plans with ease.

- 2D Drafting/Drawing
- 3D Modelling
- CAD Projects

**\$159**  
Save \$40



WebCode: IMS0153



**EXCLUSIVE TO CITY SOFTWARE**

**VIDEO ONLINE**



### Lapazz Graphic Tablets

Freestyle draw like never before!

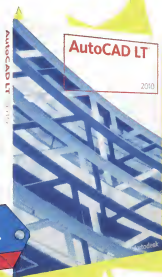
Lapazz Tablets will give you more flexibility in exploring your creativity and mastering your design skills. With Wired & Wireless versions available, 1024 levels of pressure, and compatible with Windows 7. Lapazz allows you to be the master of all creations!

5 x 4" - Wired	LPZ0001	\$49.95
5 x 3" - Wireless	LPZ0003	\$88
12 x 9" - Wired	LPZ0002	\$149.95

citysoftware.com.au

1300 658 600

**CITY SOFTWARE**  
Black Tie Service, Plain Wrap Price



**\$1790**  
Save \$162  
**FREE DELIVERY**

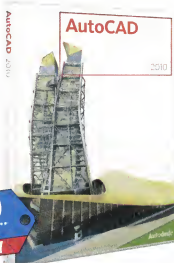
## AutoCAD LT 2010

The most comprehensive 2D CAD solution

AutoCAD LT 2D drafting and detailing software is the professional choice because we focus on boosting your productivity. A comprehensive set of 2D tools allows you to accurately and efficiently create, modify, and document your drawings. Using the genuine DWG file format provides stability and compatibility when you communicate with clients and colleagues. And you can optimise the software for the way you work with menu and user interface options. Packed with powerful features, AutoCAD LT is built for drafting.

Upgrade (AUT0224) **\$899**  
Subscription (AUT0225) **\$375**

WebCode: AUT0223



**\$5990**  
Save \$527  
**FREE DELIVERY**

## AutoCAD 2010

Take design further

Speed up documentation, share designs accurately, and explore ideas more intuitively in 3D. Getting that new design from paper to computer has never been easier. Proving to be the industry standard for model prototypes, to floor plans, and even more. AutoCAD provides the ultimate in power and flexibility, customisable for your specific needs.

- Keep everything connected with the new parametric drawing tool, saving you time and energy for bigger challenges.
- Minimize workarounds with automated annotation scaling features.
- Use the intuitive ribbon-based user interface to access commands based on the task at hand.
- Manage and edit your blocks easily by using Dynamic Blocks.

WebCode: AUT0231



**\$1155**  
Save \$95  
**FREE DELIVERY**

### Autodesk Mudbox 2010

Script and paint ultra-realistic 3D characters and environments

- Intuitive, brush-based sculpting
- 3D high-resolution painting
- Texture baking for film and game pipelines

WebCode: AUT0260



**\$2150**  
Save \$132  
**FREE DELIVERY**

### Autodesk Inventor

Digital prototyping at its best!

Create a single digital model that gives you the ability to design, visualize, and simulate your products

WebCode: AUT0259



**\$519**  
Save \$310  
**FREE DELIVERY**

### CorelDRAW Graphics Suite X4

The design software of choice for the signage industry

Create powerful designs using intuitive vector illustration and page layout tools.

WebCode: COR8986



**\$569**  
Save \$200  
**FREE DELIVERY**

### Corel Painter 11

The most inventive digital painting software on the market

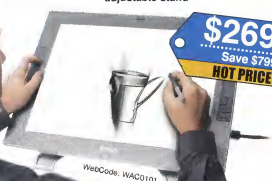
Gain a full art studio that gives you the tools to create unprecedented artwork.

WebCode: COR8712

## Wacom Cintiq 21UX 21" Graphics Tablet

High-resolution display and a dynamically adjustable stand

**\$2699**  
Save \$799  
**HOT PRICE**



WebCode: WAC0101



ACCESSORIES  
AVAILABLE  
ONLINE!

**FREE DELIVERY**

## Wacom Intuos4 Graphic Tablets

Precise control for graphic professionals

Intuos4 - Small	4 x 6"	WAC4400	<b>\$295</b>
Intuos4 - Medium	6 x 9"	WAC6400	<b>\$450</b>
Intuos4 - Large	8 x 13"	WAC8400	<b>\$610</b>
Intuos4 - XLarge	12 x 19"	WAC1240	<b>\$940</b>



#### Components

InDesign	•	•				•
Photoshop Ext	•		•		•	•
Photoshop		•				
Illustrator	•	•	•			
Acrobat 9 Pro						
Flash Pro	•			•	•	
Dreamweaver	•	•	•			•
Fireworks	•		•	•	•	
Contribute						•
After Effects						•
Premiere Pro						•
Soundbooth						•
OnLocation						•
Encore						•

#### Shared features, services and applications

Bridge	•	•	•	•	•	•
Device Central	•	•	•	•	•	•
Dynamic Link					•	•
Version Cue	•	•	•	•	•	•

#### Pricing

<b>Student</b>	<b>\$315</b>	<b>\$259</b>	<b>\$267</b>	<b>\$229</b>	<b>\$314</b>	<b>\$473</b>
WebCode - WIN	ADS0025	ADS0028	ADS0033	ADS0035	ADS0031	ADS0034
WebCode - MAC	ADS0026	ADS0029	ADS0032	ADS0034	ADS0030	ADS0029
<b>Academic</b>	<b>\$828</b>	<b>\$623</b>	<b>\$731</b>	<b>\$536</b>	<b>\$823</b>	<b>\$1378</b>
WebCode - WIN	AEP0072	AEP0074	AEP0085	AEP0087	AEP0078	AEP0076
WebCode - MAC	AEP0071	AEP0073	AEP0079	AEP0086	AEP0077	AEP0075
<b>Upgrade</b>	<b>\$859</b>	<b>\$687</b>	<b>\$828</b>	<b>\$566</b>	<b>\$822</b>	<b>\$1247</b>
WebCode - WIN	ALG1109	ALG1115	ALG1133	ALG1139	ALG1127	ALG1121
WebCode - MAC	ALG1108	ALG1114	ALG1132	ALG1138	ALG1126	ALG1120
<b>Full</b>	<b>\$2588</b>	<b>\$1982</b>	<b>\$2341</b>	<b>\$1389</b>	<b>\$2411</b>	<b>\$3587</b>
WebCode - WIN	ALD1207	ALD1209	ALD1215	ALD1217	ALD1213	ALD1211
WebCode - MAC	ALD1206	ALD1208	ALD1214	ALD1216	ALD1212	ALD1210



**\$987**  
Save \$125  
FREE DELIVERY

#### Adobe Photoshop CS4

Create powerful images with the professional standard

Explore your creativity, and create visual stunning designs with ease. The industry standard in photo editing & design.

WebCode - WIN: ALD1235  
WebCode - MAC: ALD1234



**\$1389**  
Save \$125  
FREE DELIVERY

#### Adobe Photoshop Extended CS4

Explore your wildest ideas while you develop valuable career skills. Breakthrough 3D painting and compositing capabilities let you work with 3D models images.

WebCode - WIN: ALD1239  
WebCode - MAC: ALD1238



**\$1142**  
Save \$274  
FREE DELIVERY

#### Adobe Premiere Pro CS4

Capture, edit, and deliver video online

The start-to-finish video production solution that includes Adobe OnLocation CS4 and Encore CS4 software.

WebCode - WIN: ALD1203  
WebCode - MAC: ALD1202



**\$369**  
Save \$169  
FREE DELIVERY

#### Adobe Photoshop Lightroom 2

Simplify photography from shoot to finish

Enhance specific areas of a photo precisely, adjust overall color, exposure, and tonal range.

WebCode - WIN & MAC: ALD9652



**\$874**  
Save \$158  
FREE DELIVERY

#### Adobe Illustrator CS4

Comprehensive vector graphics environment

With new transparency in gradients and multiple artboards that invite you to explore more efficient ways to design.

WebCode - WIN: ALD1230  
WebCode - MAC: ALD1229



**\$985**  
Save \$165  
FREE DELIVERY

#### Adobe InDesign CS4

Professional layouts for print and digital publishing

Create compelling print layouts, immersive content for playback in the Adobe Flash Player runtime, and interactive PDF documents.

WebCode - WIN: ALD1232  
WebCode - MAC: ALD1231



**\$427**  
Save \$103  
FREE DELIVERY

#### Adobe Fireworks CS4

Can rapidly prototype and design for the web

Create and optimise images for the web more quickly and accurately than ever before with an enhanced toolset.

WebCode - WIN: ALD1223  
WebCode - MAC: ALD1222



**\$548**  
Save \$162  
FREE DELIVERY

#### Adobe Dreamweaver CS4

Design, develop, and maintain standards-based websites and applications

Make your vision a reality with one of the industry's leading web authoring tools.

WebCode - WIN: ALD1221  
WebCode - MAC: ALD1220

## Save with Software Licensing

When do I need Software Licenses?

If you have more than 5 computers

Why do I need Software Licenses?

Save Money, Easy to Manage,  
Easy to upgrade.

Call City Software on 1300 658 600 to speak  
to a Software Licensing Consultant or email  
licensing@citysoftware.com.au



citysoftware.com.au



1300 658 600

**CITY SOFTWARE**  
Black Tie Service, Plain Wrap Prices™





### Norton Internet Security 2010

Safer. Smarter. Faster.

#### 1 Year Subscription

3 Users	SYM8851	\$79
5 Users	SYM8851	\$135
10 Users	SYM8852	\$189



### Norton 360 4.0 - 3 User

All-in-one security just got better  
1 Year Subscription

3 User	SYM3600	\$94
5 Users	SYM3601	\$160
10 Users	SYM3602	\$267



### VMware Fusion 3

The best way to run  
Windows on your MAC

Run the most demanding MAC and Windows applications side-by-side at maximum speeds without rebooting

WebCode: VMW0041



### Net Nanny Home 6

Protect your family on the internet  
from inappropriate content!

3 great Internet Protection tools - 1 great value! Net Nanny Home Suite gives you a fully integrated suite of Internet Protection.

WebCode: MAN0170

### AVG Internet Security 9.0

Complete protection for  
everything you do

Anti-Virus, Anti-Spyware, Anti-Rootkit, Anti-Spam, Anti-Phishing, Enhanced Firewall, Web Shield, LinkScanner & Identity Protection.

- Safe banking and shopping
- Keeps your private information secure
- Ensures web pages you visit are safe

#### 1 Year Subscription

1 User	AVG0006	\$48
3 Users	AVG0009	\$69
5 Users	AVG0007	\$99
10 Users	AVG0008	\$179



\$125  
Save \$48

### Roxio Creator 2010

The #1 selling digital media suite

- Support for ATI Stream and NVIDIA CUDA technology.
- Burn and copy discs directly on your desktop.

WebCode: ROX5020



\$179  
Save \$50

### Roxio Toast 10 Titanium Pro for MAC

The leading MAC burning suite

The best way to get pro-quality results in burning, video and photo projects. Enjoy all the power of Toast 10.

WebCode: ROX5012

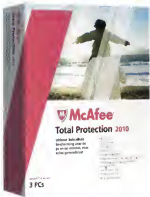
### McAfee Total Protection 2010

Protection you can trust

Revolutionary McAfee Active Protection technology provides the fastest protection against malicious threats to your PC. New and emerging threats are analyzed and blocked in milliseconds, so you don't have to wait for regular updates to arrive. Set-it-and-forget-it security works in the background and lets you focus on things you want to do.

#### 1 Year Subscription

3 Users	MCA0066	\$99
6 Users	MCA0068	\$152



\$75  
Save \$24

### Nero BackitUp & Burn

Simply back up, burn, and recover data for safe keeping!

Nero BackitUp & Burn gives you full control over the protection of your personal data.

WebCode: BUL0004



\$119  
Save \$80

### Nero 9 Reloaded

Simply create, rip, burn, copy, share, backup, play, and enjoy

The next generation of the world's most trusted integrated digital media and home entertainment software suite.

WebCode: NER0043

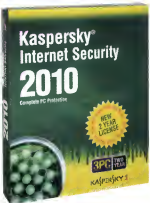
### Kaspersky Internet Security 2010

Award winning security.

Kaspersky Internet Security 2010 offers a number of new and improved features together with unique protection technologies to address the latest online threats. Keep your PC running smoothly and customize protection according to your activities. With a range of unique tools for heightened security. Protect your family while keeping your PC healthy!

#### 2 Year Subscription

1 User	KAS0023	\$49
3 Users	KAS0014	\$83



\$79  
Save \$20

### Symantec Norton Ghost 15

Create full system and simple backups

- Cold Imaging lets you back up files without installing Ghost
- Back up large amounts of data to high-capacity Blu-ray Disc-up to 25GB per disc or 50GB dual-layer

WebCode: SYM883



\$67  
Save \$12

### Acronis True Image Home 2010

Easy and fast disk imaging

Provides home users reliable and timeless backup and recovery of their operating system, applications, settings and personal files.

WebCode: MAN0171



## Microsoft Office Home & Student 2007

Great for families, excellent  
for students

The software suite that helps people easily create great-looking documents, worksheets and presentations, as well as manage notes and information at home.

- Microsoft Excel
- Microsoft Powerpoint
- Microsoft Word
- Microsoft OneNote

**\$108**

Save \$101

**HOT PRICE**

WebCode: MSA6101

**3  
User**



**FREE  
DELIVERY**

## Windows 7

Everything you need for business and home

Home Premium	MSA5131	<del>\$265</del>	<b>SAVE \$34</b>
Home Premium - Upgrade	MSA5132	<del>\$169</del>	<b>SAVE \$30</b>
Professional	MSA5134	<del>\$379</del>	<b>SAVE \$70</b>
Professional - Upgrade	MSA5135	<del>\$339</del>	<b>SAVE \$60</b>
Ultimate	MSA5128	<del>\$389</del>	<b>SAVE \$30</b>
Ultimate - Upgrade	MSA5129	<del>\$339</del>	<b>SAVE \$90</b>

## Dragon Naturally Speaking 10 Preferred

Voice recognition, speech-to-text software, perfect for dictation.

Small business and advanced PC users now have the power to create documents, reports and emails three times faster than most people type — with up to 99% accuracy. Surf the Web by voice or dictate and edit in Microsoft Word and Excel, Corel WordPerfect, and most other Windows-based applications.



WebCode: NUA0187

## Microsoft Office Suites

Create visually stunning documents, worksheets & presentations

Home & Student 2008 - MAC	MSA3770	<del>\$179</del>	<b>SAVE \$49</b>
Office Business Edition 2008 - MAC	MSA3780	<del>\$399</del>	<b>SAVE \$200</b>
Small Business Edition 2007	MSA6105	<del>\$228</del>	<b>SAVE \$441</b>
Professional 2007	MSA6108	<del>\$715</del>	<b>SAVE \$184</b>



**\$219**

Save \$51

**FREE DELIVERY**



**\$145**

Save \$184

**HOT PRICE**



**BONUS  
Logitech  
Webcam  
C250**

**\$259**

Save \$140

**FREE DELIVERY**

## SmartDraw 2010

Create stunning artwork in  
Microsoft Office with ease

Quickly create the business graphics you need to succeed. SmartDraw is the perfect companion product to Microsoft Office.

WebCode: SMT2010

## Nitro PDF Professional 6

The original and  
best Acrobat alternative  
Fast, high-quality document  
conversion. Do everything you do  
with paper electronically.

WebCode: NIT0006

## PaperPort Professional 12

World's favorite document  
management software

The fastest and easiest way for  
home users to scan, organize, find  
and share documents and photos.

WebCode: NUA0146



**BONUS  
Logitech LS1  
Laser Mouse**

**\$132**

Save \$17

**HOT PRICE**

## PDF Converter Professional 6

Complete PDF solution designed  
specifically for the business user  
Create 100% industry-standard  
PDF files, from virtually any PC  
application.

WebCode: NUA0156



**FREE  
DELIVERY**

## Adobe Acrobat 9 Series for Windows

Protect your documents with PDF

Adobe Acrobat Standard	ALD9649	<del>\$399</del>	<b>SAVE \$174</b>
Adobe Acrobat Professional	ALD9652	<del>\$594</del>	<b>SAVE \$264</b>
Acrobat Pro Extended	ALD9650	<del>\$915</del>	<b>SAVE \$418</b>

WebCode: NUA0112

WebCode: ACT0050



**\$139**

Save \$160

**HOT PRICE**

## Nuance OmniPage 17

Never retype or reformat  
a document ever again!

- Increased word accuracy
- Faster launch times
- One-click toolbar in Microsoft Office
- Asian language recognition



**\$229**

Save \$50

**FREE DELIVERY**

## ACT! by Sage 2010

#1 Selling contact manager  
Keep all your important relationship  
details for quick, organised access to  
the information you need.

citysoftware.com.au

1300 658 600

**CITY  
SOFTWARE**

Black Tie Service, Plain Wrap Prices

**AccountRight** MYOB

**Standard**

**\$359**  
Save \$10  
FREE DELIVERY

OUT LATE MARCH  
PREORDER  
NOW

### MYOB AccountRight Standard 19

Ideal for small businesses  
The smarter way to manage your business and inventory requirements.

- Calculate your GST & BAS
- Google Maps Integration
- Manage jobs, customers & suppliers
- Business performance reports
- Perfect for sole traders
- Estimates (quotes) & job costing.

WebCode: MYB0107

**AccountRight** MYOB

**Plus**

**\$645**  
Save \$10  
FREE DELIVERY

OUT LATE MARCH  
PREORDER  
NOW

### MYOB AccountRight Plus 19

Great for expanding businesses  
MYOB AccountRight Plus is business, payroll and time billing software.

- See how your business is performing
- Bill for your time
- Enhanced Help Centre
- Sales invoices & Manage debtors
- Pay & track expenses
- Manage Creditors
- Company Data Auditor

WebCode: MYB0108

**AccountRight** MYOB

**Premier**

**\$1399**  
Save \$299  
FREE DELIVERY

OUT LATE MARCH  
PREORDER  
NOW

### MYOB AccountRight Premier 19

Powerful multi-user software  
Process foreign currency transactions, streamline payroll and analyse your business in greater detail.

- Integrated payroll management
- Business Insights Dashboard
- Generate comprehensive reports
- Sales invoices & Manage debtors
- Integrate with Microsoft Office
- Complete inventory management
- Transaction management

WebCode: MYB0110

**AccountRight** MYOB

**\$245**  
Save \$11  
FREE DELIVERY

OUT LATE MARCH  
PREORDER  
NOW

**MYOB AccountRight Standard 19 Upgrade**  
Break into 2010 with extra features, and up-to-date BAS & GST rates  
Upgrade from MYOB Accounting

WebCode: MYB0111

**AccountRight** MYOB

**Plus**

**\$359**  
Save \$39  
FREE DELIVERY

OUT LATE MARCH  
PREORDER  
NOW

**MYOB AccountRight 19 Plus Upgrade**  
Upgrade to the Current GST & BAS Rates, with added features.  
Upgrade from MYOB Accounting Plus

WebCode: MYB0112

## FREE UPGRADES APPLY FOR 2009 MYOB & QUICKBOOKS VERSIONS

\*CONDITIONS APPLY

**QuickBooks**

**Accounting 2010/11 + Advantage**

**\$285**  
Save \$13  
FREE DELIVERY

OUT LATE MARCH  
PREORDER  
NOW

### QuickBooks Accounting 2010/11 + Advantage

Easy to set-up, learn and use  
A powerful software package designed for small businesses that require finance and inventory tracking but not payroll management.

WebCode: QUI0199

**QuickBooks**

**Plus 2010/11 + Advantage**

**\$560**  
Save \$80  
FREE DELIVERY

OUT LATE MARCH  
PREORDER  
NOW

### QuickBooks Plus 2010/11 + Advantage

Comprehensive payroll management  
Timesaving features and powerful functionality make QuickBooks Plus a must for efficiency-minded businesses that manage inventory and track payroll.

WebCode: QUI0700

**QuickBooks**

**Pro 2010/11 + Advantage**

**\$795**  
Save \$124  
FREE DELIVERY

OUT LATE MARCH  
PREORDER  
NOW

### QuickBooks Pro 2010/11 + Advantage

Monitor business performance  
Prepares quotes and estimates, integrates seamlessly with Microsoft Office and has advanced tools to analyse key projects.

WebCode: QUI0201

**QuickBooks**

**Premier 2010/11 + Advantage**

**\$1335**  
Save \$214  
FREE DELIVERY

OUT LATE MARCH  
PREORDER  
NOW

### QuickBooks Premier 2010/11 + Advantage

Supports simultaneous users  
Incorporate tools and reports to meet your specialised needs, fast multi-user capability and performance increase business efficiency.

WebCode: QUI0202

**QuickBooks**

**Easy Start 2010/11**

**\$130**  
Save \$19  
FREE DELIVERY

OUT LATE MARCH  
PREORDER  
NOW

### QuickBooks Easy Start 2010/11

The simplest way to manage sales, expenses and customers  
Designed for first-time users needing a simple accounting solution.

WebCode: QUI0198

**QuickBooks**

**Personal Plus 2010/11**

**\$169**  
Save \$30  
FREE DELIVERY

OUT LATE MARCH  
PREORDER  
NOW

### QuickBooks Personal Plus 2010/11

Manage your investments  
Budgeting tools to help you save and plan for your future. Monitor all of your personal and business investments.

WebCode: QUI0193

### Retail Starter Kit 2010/11

Point of sale solution  
If you are opening your store for the first time, or upgrading from a cash register, then Reckon's Retail Starter Kit is what you need.

- QuickBooks Plus 2010/11
- Retail Point of Sale Lite 2010/11
- Includes: Receipt Printer, Cash Drawer, & Barcode Scanner

**\$899**  
Save \$99

**Reckon**

**Retail Starter Kit 2010/11**

**12 MONTHS SUPPORT & UPGRADES**

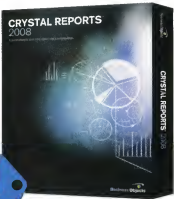
WebCode: QUI0199

## Crystal Reports 2008

Design interactive reports & connect them to virtually any data source  
Crystal Reports 2008 is a powerful, dynamic, actionable reporting solution that helps you design, explore, visualize, and deliver reports via the web or embedded in enterprise applications.

- Leverage professional reporting
- Empower end users to explore reports with on-report sorting and parameters

**\$678**  
Save \$103  
**FREE DELIVERY**



WebCode: SCR2008

## Crystal Reports 2008 Visual Advantage

The best of both worlds at a great price!

- Drive performance with industry leading report and visualization solution
- Users can make better decisions with on-report what-if analysis
- Maximize your reporting power from day one with "what-if" analysis
- Minimise IT and developer effort with interactive reports

**\$1485**  
Save \$86  
**FREE DELIVERY**



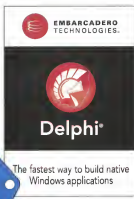
WebCode: SLL1615

## Delphi 2010 Professional

The fastest way to build native Windows applications

This program is designed for developers building high-performance desktop GUI and touch-screen applications with (or without) embedded and local database persistence. Delphi 2010 Professional's ability to generate fast single exe Windows applications with rich user experiences makes it especially well suited for ISVs building highly-graphical "packaged" Windows applications that seamlessly support an array of Windows versions without modification.

Call  
**1300 658 600**  
for a quote



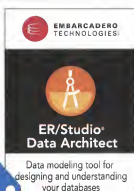
WebCode: EMB1000

## ER/Studio Data Architect

Data modeling tool for designing and understanding your databases

Embarcadero ER/Studio Data Architect, an industry-leading data modeling tool, helps companies discover, document, and re-use data assets. With round-trip database support, data architects have the power to easily reverse-engineer, analyze, and optimize existing databases. ER/Studio Data Architect provides strong reporting and communication capabilities which can be used to enforce organisational standards and achieve higher levels of productivity.

Call  
**1300 658 600**  
for a quote



WebCode: EMB1003

## FileMaker Pro 11

Tackle any task on Windows, MAC, and the web

FileMaker Pro is the leading easy-to-use database software that helps you manage people, projects, assets, and more - the easy way.

- New! FileMaker Charts
- New! Quick Reports
- New! Recurring Import

Upgrade (FIL2515) **\$328**

**\$463**  
Save \$36  
**FREE DELIVERY**



WebCode WIN - MAC: FIL2514

## Microsoft Visual Studio



## Bento 3

**\$79**

## Bento 3 for MAC

See, secure and share information like never before!

Organize contacts, track projects, plan events and more - all in one place and more efficiently with Bento 3.

WebCode: FIL2018

## FileMaker

**\$1598**  
Save \$97  
**FREE DELIVERY**

## FileMaker Server 11

Server software for database management

Fast, reliable, easy-to-manage server software for groups of FileMaker Pro users that lets you securely share your databases over a network or on the web.

WebCode WIN/MAC: FIL2515

## Microsoft Visual Studio 2008

Professional development software

Visual Studio 2008 provides a full-featured development environment for Windows and Web developers. Offering productivity enhancements for building data-driven client and Web apps. Individual developers looking to create connected applications with next-gen user experiences will find Visual Studio 2008 a perfect fit.

Standard Upgrade  
Standard Full  
Professional Upgrade  
Professional Full  
Professional Subscription w/MSDN

MSA9887 **\$284**  
MSA9888 **\$424**  
MSA9890 **\$789**  
MSA9889 **\$1159**  
MSA9904 **\$1729**

# View our video demonstrations online!

## USB Display Adapter

Connect a multiple monitors to your PC with ease

- VGA, DVI, HDMI & RCA Audio
- 1920x1080 Resolution
- Type documents on one screen while viewing reference material on the other

**\$79.95**  
Save \$99



WebCode: OTH0412



## Greenpoint 175w Inverter with USB Outlet

Mains power from your cigarette lighter socket

**\$33**  
NOT PRICE

VIDEO ONLINE

WebCode: GPE0005



## Greenpoint USB Digital Microscope (25x-400x)

Take a closer look

**\$99**

VIDEO ONLINE

WebCode: GPE0008



## B-Speech Bluetooth Handsfree Carkit

Save yourself a traffic infringement with this product for under \$40

WebCode: BSP0002



## Portable Notebook Kit

All your PC necessities in a bag

**\$18.95**  
NOT PRICE

VIDEO ONLINE

WebCode: RDM0010



## Otek Digital Slide Scanner with 2.4" Screen

Convert all your 35mm negatives and slides to digital images

**\$99.95**  
NOT PRICE

VIDEO ONLINE

WebCode: OTE0004



## USB Wired SmartPad

Space-saving, centrally positioned Touch Pad with Smart Pad Function

**\$29.80**  
NOT PRICE

VIDEO ONLINE

WebCode: ORT0001

# HP Remanufactured Servers, Storage and Accessories 130 + Products Available

- All with original manufacturer's warranty
- Save up to 50% off RRP
- Limited Stock
- As good as new

## For Pricing

Call 1300 658 600 for a quote today!

## Reseller Enquiries

To access Reseller Pricing please email your contact details to [remanufactured@citysoftware.com.au](mailto:remanufactured@citysoftware.com.au) and let us show you how to grow your business with HP Remanufactured products.

## What is Remanufactured?

Remanufactured products are units that have been returned to HP for a variety of reasons and then put through a rigorous refurbishment and testing process to bring them back to "same as new" in terms of condition and performance.

## Why should I buy HP Remanufactured servers and storage?

The same warranty as new products but up to 50% of the cost.

## Is HP Remanufactured the same as HP Renew?

Yes

**CITY SOFTWARE**  
Black Tie Services, Print & More Products

Unit 103-105, Axxess Corporate, Park, 45 Gilbey Rd Mt. Waverley Vic 3149

[citysoftware.com.au](http://citysoftware.com.au)

1300 658 600

Prices are including GST unless otherwise noted. All prices are in AUD \$A. "Best" prices are based on the RRP at time of printing. Only official Australian versions listed. All pictures are for illustration purposes only; actual product may vary from picture. Because of the dynamics of this industry, prices, versions, product details and availability are subject

to change without prior notice. Errors & omissions excepted. For out of stock items, delivery dates given are estimates. Rental Finance is available for hardware items over \$500. For academic pricing please provide proof of student enrolment, employment from an educational institution, or government department as required by the manufacturer for academic, educational or

government licensed products. International orders: please call customer service on 1300 658 600. Payment by cheque, credit card or direct deposit only. Insurance for delivery of goods is required for all international orders. Warranty & Returns: Goods are not supported on a trial basis, please check specification & compatibility with the manufacturer prior to purchasing. Our staff

can offer advice, but they cannot confirm product compatibility & functionality. All products sold are covered by manufacturer warranties. Please call 1300 658 600 or visit [www.citysoftware.com.au](http://www.citysoftware.com.au) for further details and trading terms. Melbourne only. Prices are correct as of 03/05/10 including competitor prices. Prices quoted after cashback. AFIN - 1100461233



# Pioneer of Innovative Technology

## Up to \$300 Bonus for Every Notebook and PC

Free MS Works V9, MS Flight Simulator, MS Ages of Empires, MS Zoo Tycoon, Carry Bag.

### DreamBook Lite E79

**From \$199**

RAP inc-GST

New!  
7" Mini PC



- Plays on-line videos in YouTube eBook Reader
- Lightweight and slim with shockproof feature
- Built-in Wi-Fi and LAN
- Supports Skype and Skype talk
- Built in 3G optional
- Windows Compact Edition

### DreamBook Lite M81

**From \$399**

RAP inc-GST

New Atom 32nm CPU  
10.1" Wide Screen  
3.5G Ready



- Intel Atom N450 1.66GHz 45nm Processor
- Up to 2GB DDR2 Memory
- 10.1" WSVGA (1024x600) LCD Display
- Intel Integrated Graphics
- Built in 802.11b/g Wireless and 1.3 Mega Pixel Camera
- Optional Bluetooth & 3.5G Wireless Broadband

### DreamBook Style M74

**From \$499**

RAP inc-GST

14.1"



- Durable & Chic Design
- Intel Core Duo/Core 2 Duo Processor
- Up to 4GB DDR2 Memory
- 14.1" Wide WXGA Display
- Up to 256MB Integrated Graphics
- Optional 802.11b/g Wireless, Bluetooth, Integrated 1.3 Mega Pixel Camera

### DreamBook Style M76

**From \$599**

RAP inc-GST

15.4"



- The Best Value 15.4" Notebook
- Intel Core Duo/Core 2 Duo Processor
- Up to 4GB DDR2 Memory
- 15.4" Wide WXGA Display
- Up to 256MB Integrated Graphics
- Optional 802.11b/g Wireless, Bluetooth, Integrated 1.3 Mega Pixel Camera

### DreamBook Light M73

**From \$799**

RAP inc-GST

- 13.3" Wide Screen
- Luxury design
- Centrino 2
- 3.5G Ready



- Intel Core Duo/Core 2 Duo Processor
- Up to 4GB DDR2 Memory
- 13.3" WXGA (1280x800) Crystal Bright Display
- Up to 256MB Integrated Graphics
- Optional 802.11b/g Wireless and Bluetooth
- Integrated 1.3 Mega Pixel Camera, DVD+/-RW
- Optional 3.5G Wireless Broadband (see offer below)

### DreamBook Power TW9 i7

**From \$1099**

RAP inc-GST

15.6" HD

nVidia GeForce  
GT 240  
1GB



- Style, Value, Performance & Portability
- Intel Core i3 / i5 / i7 Mobile Processor
- Up to 8GB DDR3 1333MHz Memory
- 15.6" Full HD (16:9, 1366x768) Crystal Bright nVidia GeForce Go GT 240 1GB DDR3 SATA Hard Drive, 1.3 Mega Pixel Camera, Blu Ray, TV Tuner, 802.11b/g/n Wireless

### DreamBook Power 9070 SLI

**From \$1499**

RAP inc-GST

18.4"

nVidia  
9600+9100



New  
HYBRID SLI  
Graphics

- Advanced Power Saving High-end Workstation
- Intel Centrino 2 Dual Core Processor
- nVidia GeForce Go 9600M GS-512MB + 9100M Up to 256MB Hybrid SLI PC-E Graphics
- 18.4" Wide HD+ (16:9, 1920x1080) Crystal Bright Display
- Optional TV Tuner, 1.3 Mega Pixel Camera, Wireless 802.11b/g/n, Blu-Ray, Bluetooth

### DreamBook Power W87 i7

**From \$2499**

RAP inc-GST

17.3"

nVidia GeForce  
GTX 280M



- High Performance Gaming Notebook
- Intel Core i3 / i5 / i7 Mobile Processor
- Up to 8GB DDR3 1333MHz Memory
- 17.3" Full HD (16:9, 1920x1080) Crystal Bright nVidia GeForce Go GTX 280M 1GB DDR3
- Up to 2 SATA Hard Drives, Optional RAID 0/1
- Blu Ray, TV Tuner, 802.11b/g/n Wireless

### DreamBook Power M86

**From \$1999**

RAP inc-GST

nVidia  
GTX 260M



- Ultra High End Compact Workstation
- Intel Centrino 2 Dual Core Processor
- Up to 8GB DDR3 1333MHz Memory
- nVidia GeForce Go GTX 260M 1GB PCI Express Graphics
- 15.4" Widescreen WXGA/WUXGA Crystal Bright
- 2 Mega Pixel Camera

### DreamVision All-in-one LCD PC L390

**From \$1399**

RAP inc-GST

19" Touch Screen



- Slim and stylish space saving design
- Intel Centrino 2 Processor
- 19" Widescreen WXGA Touch Screen Display
- Up to 4GB DDR2 Memory
- Up to 500GB SATA Hard Drive
- Optional Touch Screen with Polarizer and Wall Mounting Kit

### DreamVision All-in-one LCD PC D-G41

**From \$1299**

RAP inc-GST

22" Multi-touch Screen



- Revolutionary product
- The ultimate entertainment experience
- Multi-touch screen + easy wheel controls
- All-in-one space saving design
- 22" Full HD (16:9, 1920x1080) capable
- Blu-ray Playback & TV Tuner optional
- Power saving - Energy Star 5.0

### DreamVision Power i5 PC

**From \$699**

RAP inc-GST



- Extreme Performance for Gaming & Multimedia
- Intel Core i3 / i5 / i7 Processor
- Up to 8GB DDR3 Memory
- Up to 2 x nVidia GeForce GTX 256 1792MB 896bit GDDR3 PCI Express Graphics Cards
- Up to 3 SATA Hard Drives RAID 0/1/5
- Multiple case choices & customisable options

All prices include GST, exclude freight, all images are for illustrative purposes only. Errors and omissions excepted. Free 1 Year On-site Pickup & Return Warranty, 2 and 3 Years Optional.

- ISO 9001 Quality Endorsed Company QEC11489 - Commonwealth Government Endorsed Supplier 263 - State, Local, Government, Education Contract Supplier

**PIONEER  
COMPUTERS**

Build your own dream!  
**www.pioneer.net.au**  
1300 883 218 / sales@pioneer.net.au

**Dreamcare.com.au**  
New online service and support  
for all brands of PCs, Notebooks  
and Servers.



# the Workforce Printers

**EPSON**  
EXCEED YOUR VISION



Epson Stylus®  
Photo TX810FW

## small footprint small business heavyweight performer

Small offices need an Epson Workforce - the Epson Office range has everything. Up to A3\*, the latest 7.8" light touch-screen with LCD display, up to 40ppm, auto-document feeder, fax, duplexer, Wifi and LAN. Increased productivity with a choice of high capacity individual cartridges - you only replace the cartridge you use. Choose a DURABrite Ultra® ink model for document durability and plain paper printing or a Claria® ink model for high definition prints.

### AN EPSON STYLUS® OFFICE PRINTER IS A WORKFORCE PRINTER



Epson Stylus® Office T1100

Epson Stylus® Office T40W

Epson Stylus® Office TX300F

Epson Stylus® Office TX610FW



Buy  
Genuine  
Get  
Rewards

[www.epsongenuinerewards.com.au](http://www.epsongenuinerewards.com.au)

Better Products for a Better Future

Available from: Harvey Norman, Domayne, Joyce Mayne, Officeworks, Dick Smith Electronics, Bing Lee, The Good Guys, Next Byte, Radio Rentals and other leading retailers

[www.epson.com.au](http://www.epson.com.au)  
[www.epson.co.nz](http://www.epson.co.nz)